CSM\_A22\_DS\_E\_8\_11

# Install in 22-dia. or 25-dia. Panel Cutout (When Using a Ring)

- Lever for easily mounting and removing the Switch Unit.
- Increase wiring efficiency with three-row mounting of Switch Blocks.
- Finger protection mechanism on Switch Unit provided as a standard feature.
- Use 25-dia. ring to install in 25-dia. panel cutouts.
- Mounted using either open-type (fork-type) or closed-type (round-type) crimp terminals.
- IP65 oil resistance (non-lighted models) IP65 (lighted models)



Refer to Safety Precautions for All Pushbutton Switches/ Indicators and Safety Precautions on page 21.



A22L-D

A22-S

#### **List of Models**

#### **Non-lighted Pushbutton Switches**

	Appearan	ice	Model number
Round	Half guard		A22-H
	Projected		A22-C
Square	Guard		A22-D
Mushroom	Mushroom Small (30 dia.)		A22-S

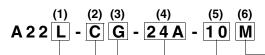
#### **Lighted Pushbutton Switches**

	Appeara	nce	Model number		
Round	Half guard		A22L-H		
Sauara	Projected		A22L-C		
Square	Guard		A22L-D		
•					

OMRON 1

#### **Model Number Structure**

Model Number Legend ..... Shipped as a set which includes the Pushbutton, Lamp (lighted type only), and Switch. For information on combinations, refer to Ordering Information on pages 3 to 4.



#### (1) Type

#### Descrip-Code tion No Non-lighted symbol Lighted L

#### (2) Flange Shape Non-lighted

Code	Description			
Н	Round	Half-guard		
С	Sauaro	Projected		
D	Square	Full-guard		
S	Round	Mushroom Small (30 dia.)		

#### Lighted

Code	Description			
Н	Round	Half-guard		
С	Square	Projection		
D	Square	Full-guard		

#### (3) Illumination Color

Code	Descrip- tion			
R	Red			
G	Green			
Υ	Yellow			
W	White			
Α	Blue			
В	Black*			
* =				

For non-lighted type only

#### (4) Light Source Without Voltage Reduction Unit

Code	Operating Voltage		
No symbol	Non-lighted		
6A		6 VAC/VDC	
12A	LED	12 VAC/VDC	
24A		24 VAC/VDC	

#### With Voltage Reduction Unit

Code	Operating Voltage		
T1	LED	100 VAC	
T2	LLD	200 VAC	

Note: LED incorporates the 24-VAC/ VDC type.

#### (5) Contacts

Code	Description
10	SPST-NO
01	SPST-NC
11	SPST-NO + SPST-NC
20	DPST-NO
02	DPST-NC

Note: 1. The contact ratings are for standard loads. For microloads, select from the accessories on page 8. 2. Refer to page 11

for contact ratings.

#### (6) Switch Action

Code	Description
М	Momentary
Α	Alternate

Note: 1. Momentary operation: Self-resetting

2. Alternate operation: Self-holding The Socket Unit holds and the Operation Unit resets.

- Specifications: See pages 11 to 12.
- Dimensions: Refer to page14.
- Precautions for correct use: Refer to page 21.
- Accessories and tools: See pages 8 to 10.

**Completely Assembled**....... Shipped as a set which includes the Pushbutton, LED (lighted type only), and Switch. **Non-lighted (Round Type)** 

Operation			Momentary opera- tion (self-resetting)	Alternate operation (self-holding)	Illumination color	
Appearance		Output Set		Set		
Round/Half-guard type		SPST-NO	A22-H□-10M	A22-H□-10A		
A22-H		SPST-NC	A22-H□-01M	A22-H□-01A		
		SPST-NO + SPST-NC	A22-H□-11M	A22-H□-11A		
		SPST-NO + SPST-NO	A22-H□-20M	A22-H□-20A	R (red) Y (vellow)	
		SPST-NC + SPST-NC	A22-H□-02M	A22-H□-02A	G (green)	
Round/Small-size		SPST-NO	A22-S□-10M		W (white)	
Mushroom type (30-dia. head)		SPST-NC	A22-S□-01M		A (blue) B (black)	
A22-S		SPST-NO + SPST-NC	A22-S□-11M		_ (=======	
		SPST-NO + SPST-NO	A22-S□-20M			
· ·		SPST-NC + SPST-NC	A22-S□-02M			

Note: The contact ratings are for standard loads.

#### Non-lighted (Square Type)

	Momentary opera- tion (self-resetting)	Alternate operation (self-holding)	Illumination color	
Appearance	Output	Set	Set	
Square/Projection type	SPST-NO	A22-C□-10M	A22-C□-10A	
A22-C	SPST-NC	A22-C□-01M	A22-C□-01A	
	SPST-NO + SPST-NC	A22-C□-11M	A22-C□-11A	
	SPST-NO + SPST-NO	A22-C□-20M	A22-C□-20A	R (red) Y (yellow)
	SPST-NC + SPST-NC	A22-C□-02M	A22-C□-02A	G (green)
Square/Guard type	SPST-NO	A22-D□-10M	A22-D□-10A	W (white)
A22-D	SPST-NC	A22-D□-01M	A22-D□-01A	A (blue) B (black)
	SPST-NO + SPST-NC	A22-D□-11M	A22-D□-11A	_ (=:==:-,
	SPST-NO + SPST-NO	A22-D□-20M	A22-D□-20A	
	SPST-NC + SPST-NC	A22-D□-02M	A22-D□-02A	

Note: The contact ratings are for standard loads.

#### **Lighted (Round Type)**

			Operation	Momentary operation (self-resetting)	Alternate operation (self-holding)	Illumination
Appearance	Output	Lighting	Operating voltage	Set	Set	color
Round/Half-guard type LED lighting	SPST-NO			A22L-H□-24A-10M	A22L-H□-24A-10A	
(without Voltage Reduction Unit) A22L-H	SPST-NC			A22L-H□-24A-01M	A22L-H□-24A-01A	
	SPST-NO + SPST-NC	_	24 VAC/VDC	A22L-H□-24A-11M	A22L-H□-24A-11A	
	SPST-NO + SPST-NO			A22L-H□-24A-20M	A22L-H□-24A-20A	
	SPST-NC + SPST-NC			A22L-H□-24A-02M	A22L-H□-24A-02A	R (red) Y (yellow)
Round/Half-guard type	SPST-NO	LED	100 VAC	A22L-H□-T1-10M	A22L-H□-T1-10A	G (green)
LED voltage-reduction lighting	3531-110		200 VAC	A22L-H□-T2-10M	A22L-H□-T2-10A	W (white)
(with Voltage Reduction Unit)	SPST-NC		100 VAC	A22L-H□-T1-01M	A22L-H□-T1-01A	A (blue)
A22L-H	31-110		200 VAC	A22L-H□-T2-01M	A22L-H□-T2-01A	
	SPST-NO + SPST-NC		100 VAC	A22L-H□-T1-11M	A22L-H□-T1-11A	
	31 31-10 + 31 31-10		200 VAC	A22L-H□-T2-11M	A22L-H□-T2-11A	
	SPST-NO + SPST-NO		100 VAC	A22L-H□-T1-20M	A22L-H□-T1-20A	
	31 31-NO + 3F31-NO		200 VAC	A22L-H□-T2-20M	A22L-H□-T2-20A	1
	SPST-NC + SPST-NC		100 VAC	A22L-H□-T1-02M	A22L-H□-T1-02A	1
	3F31-NC + 3F31-NC		200 VAC	A22L-H□-T2-02M	A22L-H□-T2-02A	

Note: The contact ratings are for standard loads.

Individual models: Refer to pages 5 to 7.

(The Pushbutton, Lamp, and Switch can be ordered separately.)

- Specifications and dimensions: See pages 11 to 14.
- Accessories and tools: See pages 8 to 10.

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**Completely Assembled** ....... Shipped as a set which includes the Pushbutton, LED (lighted type only), and Switch. **Lighted (Square Type)** 

			Momentary operation (self-resetting)	Alternate operation (self-holding)	Illumination color	
Appearance	Output	Lighting	Operating voltage	Set	Set	COIOI
Square/Projection type LED lighting	SPST-NO			A22L-C□-24A-10M	A22L-C□-24A-10A	
(without Voltage Reduction Unit) A22L-C	SPST-NC			A22L-C□-24A-01M	A22L-C□-24A-01A	
	SPST-NO + SPST-NC		24 VAC/VDC	A22L-C□-24A-11M	A22L-C□-24A-11A	
	SPST-NO + SPST-NO			A22L-C□-24A-20M	A22L-C□-24A-20A	-
	SPST-NC + SPST-NC			A22L-C□-24A-02M	A22L-C□-24A-02A	R (red) Y (yellow)
Square/Projection type	ODOT NO	LED	100 VAC	A22L-C□-T1-10M	A22L-C□-T1-10A	G (green)
LED voltage-reduction lighting	SPST-NO		200 VAC	A22L-C□-T2-10M	A22L-C□-T2-10A	W (white)
(with Voltage Reduction Unit) A22L-C	SPST-NC	1	100 VAC	A22L-C□-T1-01M	A22L-C□-T1-01A	A (blue)
AZZL-O	3P31-NC		200 VAC	A22L-C□-T2-01M	A22L-C□-T2-01A	
	SPST-NO +	Ī	100 VAC	A22L-C□-T1-11M	A22L-C□-T1-11A	
	SPST-NC		200 VAC	A22L-C□-T2-11M	A22L-C□-T2-11A	
	SPST-NO +	1	100 VAC	A22L-C□-T1-20M	A22L-C□-T1-20A	
	SPST-NO		200 VAC	A22L-C□-T2-20M	A22L-C□-T2-20A	
	SPST-NC +		100 VAC	A22L-C□-T1-02M	A22L-C□-T1-02A	
	SPST-NC		200 VAC	A22L-C□-T2-02M	A22L-C□-T2-02A	

Note: The contact ratings are for standard loads.

			Operation	Momentary operation (self-resetting)	Alternate operation (self-holding)	Illumination color
Appearance	Output	Lighting	Operating voltage	Set	Set	COIOI
Square/Full-guard type LED lighting (without Voltage Reduction Unit)	SPST-NO			A22L-D□-24A-10M	A22L-D□-24A-10A	
A22L-D	SPST-NC			A22L-D□-24A-01M	A22L-D -24A-01A	
	SPST-NO + SPST-NC		24 VAC/VDC	A22L-D□-24A-11M	A22L-D□-24A-11A	
	SPST-NO + SPST-NO			A22L-D□-24A-20M	A22L-D□-24A-20A	
	SPST-NC + SPST-NC	LED		A22L-D□-24A-02M	A22L-D□-24A-02A	R (red) Y (yellow) G (green)
Square/Full-guard type	SPST-NO		100 VAC	A22L-D□-T1-10M	A22L-D□-T1-10A	W (white)
LED voltage-reduction lighting	3531-110		200 VAC	A22L-D□-T2-10M	A22L-D□-T2-10A	A (blue)
(with Voltage Reduction Unit) A22L-D	SPST-NC		100 VAC	A22L-D□-T1-01M	A22L-D□-T1-01A	
AZZL-D	3P31-NC		200 VAC	A22L-D□-T2-01M	A22L-D□-T2-01A	
	SPST-NO +		100 VAC	A22L-D□-T1-11M	A22L-D□-T1-11A	
	SPST-NC		200 VAC	A22L-D□-T2-11M	A22L-D□-T2-11A	
	SPST-NO +		100 VAC	A22L-D□-T1-20M	A22L-D□-T1-20A	
	SPST-NO		200 VAC	A22L-D□-T2-20M	A22L-D□-T2-20A	1
**	SPST-NC +	1	100 VAC	A22L-D□-T1-02M	A22L-D□-T1-02A	
	SPST-NC		200 VAC	A22L-D□-T2-02M	A22L-D□-T2-02A	

Note: The contact ratings are for standard loads.

Individual models: Refer to pages 5 to 7.

(The Pushbutton, Lamp, and Switch can be ordered separately.)

■ Specifications and dimensions: See pages 11 to 14.

■ Accessories and tools: See pages 8 to 10.

**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.

# **Lighted Models Lighted Models** (without Voltage Reduction Unit) **Non-lighted Models** (with Voltage Reduction Unit) Pushbutton Pushbutton Pushbutton Lamp Lamp LED LED Switch Switch (without Voltage Reduction Unit) Switch (with Voltage Reduction Unit)

Ordering set combinations: Refer to pages 3 to 4.

- Specifications and dimensions: See pages 11 to 14.
- Accessories and tools: See pages 8 to 10.

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.

#### **Pushbutton** Non-lighted

Sealing	IP65 oil-resistant models								
Appearance	Half-guard type	Round/Mushroom type (30-dia. head)	Square/Projection type	Square/Full-guard type					
Color	Model	Model	Model	Model					
Red	A22-HR	A22-SR	A22-CR	A22-DR					
Green	A22-HG	A22-SG	A22-CG	A22-DG					
Yellow	A22-HY	A22-SY	A22-CY	A22-DY					
White	A22-HW	A22-SW	A22-CW	A22-DW					
Blue	A22-HA	A22-SA	A22-CA	A22-DA					
Black	A22-HB	A22-SB	A22-CB	A22-DB					

#### Lighted

Sealing		IP65								
Appearance	Half-guard type	Square/Projection type	Square/Full-guard type							
Color	Model	Model	Model							
Red	A22L-HR	A22L-CR	A22L-DR							
Green	A22L-HG	A22L-CG	A22L-DG							
Yellow	A22L-HY	A22L-CY	A22L-DY							
White	A22L-HW	A22L-CW	A22L-DW							
Blue	A22L-HA	A22L-CA	A22L-DA							

Ordering set combinations: Refer to pages 3 to 4.

■ Specifications and dimensions: See pages 11 to 14.

■ Accessories and tools: See pages 8 to 10.

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.

#### Lamp LED Lamp

		Operating voltage	6 VAC/VDC	12 VAC/VDC	24 VAC/VDC
Appearance	ce	LED Color	Model	Model	Model
0	40	Red	A22-6AR	A22-12AR	A22-24AR
A22	AC and	Green	A22-6AG	A22-12AG	A22-24AG
A22	DC	Yellow *2	A22-6AY	A22-12AY	A22-24AY
•		Blue	A22-6AA	A22-12AA	A22-24AA

<sup>\*1.</sup> For voltage-reduction lighting, use the A22-24A□. Only 24-V LED lamps can be used. \*2. Used when the Pushbutton color is yellow or white.

#### **Switch (Standard Load) No Voltage Reduction Unit**

	Classification	Non-I	ighted	Lighted		
Appearance						
	Operation	Momentary Alternate		Momentary	Alternate	
Contacts		Model	Model	Model	Model	
	SPST-NO	A22-10M	A22-10A	A22L-10M	A22L-10A	
0	SPST-NC	A22-01M	A22-01A	A22L-01M	A22L-01A	
Standard load	SPST-NO + SPST-NC	A22-11M	A22-11A	A22L-11M	A22L-11A	
ioau	SPST-NO + SPST-NO	A22-20M	A22-20A	A22L-20M	A22L-20A	
	SPST-NC + SPST-NC	A22-02M	A22-02A	A22L-02M A22L-02A		

#### **Voltage Reduction Unit**

	Classification	110 VAC	, Lighted	220 VAC, Lighted		
Appearance						
	Operation	Momentary	Alternate	Momentary	Alternate	
Contacts		Model	Model	Model	Model	
	SPST-NO	A22L-10M-T1	A22L-10A-T1	A22L-10M-T2	A22L-10A-T2	
Champland	SPST-NC	A22L-01M-T1	A22L-01A-T1	A22L-01M-T2	A22L-01A-T2	
Standard SPST-NO + SPST-NC		A22L-11M-T1	A22L-11A-T1	A22L-11M-T2	A22L-11A-T2	
Ioau	SPST-NO + SPST-NO	A22L-20M-T1	A22L-20A-T1	A22L-20M-T2	A22L-20A-T2	
	SPST-NC + SPST-NC	A22L-02M-T1	A22L-02A-T1	A22L-02M-T2	A22L-02A-T2	

Ordering set combinations: Refer to pages 3 to 4.

**OMRON** 

■ Specifications and dimensions: See pages 11 to 14.

■ Accessories and tools: See pages 8 to 10.

<sup>\*1.</sup> A DPST-NO model is shown here as an example.
\*2. For a model with a Voltage Reduction Unit, use the A22-24A□. Only 24-V LED lamps can be used.

## Accessories (Order Separately) Accessories

Switch Blocks  DPST-NO Standard load DPST-NC Standard load A22-203 SPST-NO + SPST-NC Standard load A22-15  Lamp Sockets  Direct lighting Voltage-reduction lighting Voltage-reduction lighting Voltage-reduction Vol	Ite	em	Appearance	Classifi	Classification			Remarks	
SPST-NC Mindroland AZ2-01 Order Switch Blocks to add an SPZ-01 Switch Blocks  DPST-NO Mindroland AZ2-02 Blandard load AZ2-01 Block for standard loads) or to replace block for standard loads) or to replace block for standard loads) or to replace and AZ2-02 Block for standard loads) or to replace and AZ2-02 Block for standard loads) or to replace and AZ2-02 Block for standard loads) or to replace and AZ2-02 Block for standard loads) or to replace and AZ2-02 Block for standard loads) or to replace and AZ2-02 Block for standard loads) or to replace and AZ2-02 Block for standard loads) or to replace and AZ2-02 Block for standard loads) or to replace and AZ2-02 Block for standard loads) or to replace and AZ2-02 Block for standard loads) or to replace and AZ2-02 Block for AZ2-02 Block for AZ2-02 Block for AZ2-02 Block for Standard loads). The standard formation for the Mounting Latches for attendance models for attendance for the standard models for attendance for the standard formation for the Mounting Latches for attendance for at				SPST-NO					
Serial								Onder Control Discharts add an ODOT NO	
Switch Blocks  DPST-NO Standard load DPST-NO Standard load A22-02 Spst-NO+SPST-NO Standard load A22-03 Spst-NO+SPST-NO Direct lighting Direct lighting Direct lighting A22-03 Direct lighting A22-03 Direct lighting A22-03 Direct lighting A22-03 Direct lighting A22-11 Direct lighting A22-				SPST-NC					
DPST-NO Microload A22-035 DPST-NO Microload A22-035 DPST-NO Microload A22-035 DPST-NO Sport is not quiet to mount three Non-lighted Swite Units.  DPST-NO SPST-NO Microload A22-031 DPST-NO Microload A22-035 DPST-NO SPST-NO SPST-NO SPST-NO SPST-NO A22-11 Used when changing the lighting A22-11 Used when changing the lighting Microload A22-11 Used when changing the lighting method with Spst-in Legend Plate Por momentary models A22-2320 Description (With Snap-in Legend Plate (Without text) Description Spst-in Legend Plate (Without text) Description Descript			- P					Block (for standard loads) or to replace a	
DPST-NC Standard load Microland SPST-NO + SPST-NC Standard load SPST-NO + SPST-NC Standard load A22-11 Microland A22-12 Standard load A22-11 Microland A22-11 M	Switch Bloo	cks		DPST-NO					
Direct lighting   Direct lig									
SPST-NO + SPST-NC   Standard load   A22-11S   Microload   A22-11S   Microload   A22-11S   A22-11S   A22-11S   Microload   A22-11S   A22-				DPST-NC					
A22-11S  Direct lighting  Voltage-reduction lighting 110 VAC A22-T1  Voltage-reduction lighting 220 VAC A22-T2  Mounting Latches  For alternate models  For alternate models  For alternate models  With Snap-in Legend Plate Red A222-3322  Without Snap-in Legend Plate Red A222-3323  Without Snap-in Legend Plate Red A222-3323  Without Snap-in Legend Plate Red A222-3332  Without Snap-in Legend Plate Red A222-3332  Without Snap-in Legend Plate A222-3333  Without Snap-in Legend Plate Red A222-3332  Without Snap-in Legend Plate Red A222-3333  Without Snap-in Legend Plate Red A222-3330  Without Snap-in Legend Plate Red A222-3330  Without Snap-in Legend Plate Red A222-3330  For flat or projection models  For full-guard models  For full-guard models  For full-guard models  For full-guard models  For flat			0 0 0	ODOT NO ODOT NO					
Direct lighting   A22-TN   Voltage-reduction   Injury   A22-T1   Used when changing the lighting method   Injury   A22-T1   Used when changing the lighting method   A22-T1   Used violated   A22-				SPST-NO + SPST-NC					
Lamp Sockets    Voltage-reduction lighting   110 VAC   A22-T1   Used when changing the lighting method   120 VAC   A22-T2   (LED only)				Direct lighting	1		A22-TN		
Ightling   220 VAC   A22-T2   (LED only)	l amn Sock	rete	<b>₩</b> \$\$,		110	VAC	A22-T1		
For mementary models For alternate models For alternate models For alternate models  Standard size  Standard size  Standard size  With Snap-in Legend Plate (Without text)  Red A227-3323  Without Snap-in Legend Plate (Without text)  Black A227-3333  Without Snap-in Legend Plate (Without text)  Red A227-3330  For flat or projection models  For flat or projection models  For full-guard models  For full-guard models  For flat models  For flat models  For flat models  A227-3600F  For projection mode	-amp ooch	Clo							
Mounting Latches  For alternate models  With Snap-in Legend Plate (Without text)  Without Snap-in Legend Plate (Without text)  For flat or projection models  For flat or projection models  For flat models  A222-3330  For flat models  For full-guard models  A222-3580  For full-guard models  A222-3600F  For projection models  For tull-guard models  A222-3600F  For Willow (A222-300TG)  Winte (A222-300TG)  Wi				lighting	220	VAC	A22-T2	(LED OITIY)	
Mounting Latches    For alternate models   A22-3210   Carps			(A)	For momentary mod	dels		A22-3200		
Standard size   With Snap-in Legend Plate   With Snap-in Legend Plate   Without text)   Without Snap-in Legend Plate   Red   A222-3322   Black   A222-3323   Snap-in Legend Plate   A222-3320   Without Snap-in Legend Plate   A222-3320   Black   A222-3333   Without Snap-in Legend Plate   A222-3333   Black   A222-3333   Without Snap-in Legend Plate   A222-3333   Black   A222-3333   A222-3333   Without Snap-in Legend Plate   A222-3330   Black   A222-3333   Black   A222-3333   A222-3333   Black   A222-3330	Mounting L	atches		,,					
Standard size    Standard size				For alternate models	s		A22-3210	·	
Standard size  With shap-in Legend Plate (Without text)  Without Snap-in Legend Plate (Without text)  With A222-3332  Black A222-3333  With A222-3333  Snap-in Legend Plate is acrylic.  White A222-3331  Red A222-3332  Black A222-3333  Snap-in Legend Plate is acrylic.  White A222-3333  Snap-in Legend Plate is acrylic.  White A222-3330  Without Snap-in Legend Plate (Without text)  White A222-3330  Black A222-3330  This Lock Ring is used when a more set lock feature is required.  For flat or projection models A222-3580  For full-guard models A222-3580  For full-guard models A222-3580  For full-guard models A222-3600  For full-guard models A222-3600  For full-guard models A222-3000  For mo			-41			White	Δ227-3321	aany.	
Elgend   Plate   Without Snap-in Legend Plate   White   A222-3320   White   A222-3320   White   A222-3331   Red   A222-3332   Plate   A222-3333   Red   A222-3333   Plate   Plate   A222-3333   Plate   A222-3333   Plate   A222-3333   Plate   A222-3333   Plate   A222-3333   Plate   A222-3333   Plate   Plate   A222-3333   Plate   Plate   A222-3333   Plate   Plate   Plate   A222-3333   Plate   Plat		Standard			d Plate				
Without Snap-in Legend Plate   White A222-3332   Red A222-3333   Red				(Without text)				Snap-in Legend Plate is acrylic.	
With Snap-in Legend Plate With Snap-in Legend Plate Without text)  Without Snap-in Legend Plate  Red A22Z-3333 Without Snap-in Legend Plate  Red A22Z-3330  Metallic Bezel Rings  For flat or projection models For full-guard models For M22				Without Snap-in Led	gend Plate		A22Z-3320		
Large size  Without Early  Black A222-3332  Black A222-3332  Without Snap-in Legend Plate  Round  Round  A222-3360  Round  A222-3360  For falt or projection models  For full-guard models  For full-guard models  For full-guard models  For full-guard models  For projection models  For full-guard models  For full-guard models  For full-guard models  For full-guard models  A222-3600T  For full-guard models  A222-3600T  For full-guard models  A222-3600T  For full-guard models  A222-3600T  Red  A222-3600T  Red  A222-3600T  Red  A222-3600T  White  Blue  A222-301TA  Yellow  A222-301TA  Blue  For projection, full-guard, or half-guard models  A222-301TA  For round models  A222-301TA  A222-301TA  Blue  For round models  A222-301TA  A222-301TA  Blue  For round models  A222-301TA  Color: opaque  Material: polycarbonate resin  Material: polycarbonate resin  Waterial: polycarbonate resin  Material: polycarbonate resin  Material: polycarbonate resin  For round models  A222-301TA  A222-3030  For round models  A222-3030  For M22  For male  For projection, full-guard, or half-guard models  A222-301TA  A222-301TA  A222-301TA  A222-301TA  A222-301TA  A222-301TA  For projection, full-guard, or half-guard models  A222-301TA  A222-301TA  A222-301TA  A222-301TA  For round models  A222-301TA  A2							A22Z-3331		
Without Snap-in Legend Plate  Round  Round  A222-3333  Without Snap-in Legend Plate  A222-3330  Round  A222-3380  For flat or projection models  For full-guard models  A222-3600  For full-guard models  A222-3000  Red  Green  A222-301TR  Yellow  White  A222-301TW  White  A222-301TW  Blue  A222-301TW  Blue  A222-301TW  A222-301TW  A222-301TW  For models  For models  For models  For models  A222-301TW  A222-301TW  A222-301TW  A222-301TW  A222-301TW  Caps  For models  For hole  Color Caps  For hole  A222-301TW  A22	Frames				d Plate	Red	A22Z-3332	<b>1</b>	
Without Snap-in Legend Plate  Round  Round  A222-3360  For flat or projection models  For flat or projection models  For full-guard models  For full-guard models  For flat models  For flat models  For flat models  For projection models  For projection models  For projection models  For full-guard models  A222-36005  For full-guard models  A222-36006  Red  A222-36007  White  A222-3007  White  A222-3007  White  A222-3007  For M22  For mu22  For mu22  For mu22  For round models  For round models  A222-3495  For round models  A222-3495  Material: polycarbonate resin  Led when mounting three Nonlighted Switches. Gannot be used, with Allernat copyenatory and the full-guard swites.  A222-3495  Waterial: polycarbonate resin  Material: polycarbonate resin  Led when mounting three Nonlighted Switches. Gannot be used, however, with Half-guard swites.  A222-3495  Waterial: polycarbonate resin  A222-3530  Led when mounting three Nonlighted Switches. Gannot be used with Allernat action type, knob-type Selector, and Ke type Selector because of the structure.  A222-3530  Con be pluged into pre-cut panel holes future expansion. The color is black. Color: Black  A222-B101  Two holes  A222-B103  A223		Large size		(without text)		Black	A22Z-3333	Snap-in Legend Plate is acrylic.	
Round   Round   A22Z-3360				Without Snap-in Led	nend Plate		A22Z-3330		
For flat or projection models   A22Z-3580   Replace with the standard model.   Material: Copper alloy-Nickel chrome pix Cannot be used with the M22.					,				
For full-guard models   For full-guard models   For full-guard models   For full-guard models   A22Z-3600F	Lock Ring			Round			A22Z-3360		
For full-guard models  A222-3600F For filat models For projection models For projection models For full-guard models A222-3600G For full-guard models A222-3600G For full-guard models A222-300G A222-300G A222-300G A222-300G A222-300G A222-300G A222-300G A222-300G A222-300G White A222-300T White A222-300T Bilue A222-300T For mudels A222-300T	Metallic Re	zel Ringe		For flat or projection models			A22Z-3580		
For projection models For projection models For full-guard models For full-guard models For full-guard models  A22Z-3600G For full-guard models A22Z-30TG A22Z-30TG Yellow White Blue A22Z-30TW Blue A22Z-30TW Blue A22Z-30TW For models A22Z-30TW A22Z-30TW A22Z-30TW A22Z-30TW A22Z-30TW For models For much models For much models For round models For round models For round models For round models For much models For	victallic DC	zer rungs		For full-guard models			A22Z-3582		
For projection models For full-guard models For full-guard models For full-guard models A22Z-3600G Red Green A22Z-30TG Vellow A22Z-30TW White Blue A22Z-30TA For projection, full-guard, or half-guard models For mu2 For or ound models For ound models A22Z-30TA For projection, full-guard, or half-guard models For mu2 For mu2 For mu2 For mu2 For mu3 For projection, full-guard, or half-guard models For nound models For mu3 For projection, full-guard, or half-guard models For round models For nound models For round models For nound models For round models Switches. Cannot be used with Alternat action type, knob-type Selector, and Ke type Selector because of the structure. Mushroom-type Switch provides an A23 3003, three-throw spacer. (See page 25 and 5003) full received by Selector. For those designed A22Z-B101 For those designed A22Z				For flat models			A22Z-3600F	Used to prevent dust or water from entering	
Color Caps    Red	Sealing Ca	ıps		For projection models			A22Z-3600T	Color: opaque	
Green Yellow A22Z-30TY White Blue A22Z-30TA Blue A22Z-30TA  For M22 For M22 For M22  For mund models  A22Z-30TA  A22Z-30TA  For projection, full-guard, or half-guard models For round models  A22Z-3495  For mund models  A22Z-3495  Material: polycarbonate resin  Used when mounting three Nonlighted Switches. Cannot be used with Alternat action type, knot-type Selector, and Ke type Selector because of the structure. Mushroom-type Switch provides an A2Z-3003, three-throw spacer. (See page 26 for those designed A22Z-B101 for DPST-NC. Golden and PST-NO. Color: Black  Control Boxes (Enclosures)  A22Z-B101 Two holes  A22Z-B202 Three holes  A22Z-B203				For full-guard models			A22Z-3600G	Material: silicon	
Green Yellow A22Z-30TY White Blue A22Z-30TA Blue A22Z-30TA  For M22 For M22 For M22  For mund models  A22Z-30TA  A22Z-30TA  For projection, full-guard, or half-guard models For round models  A22Z-3495  For mund models  A22Z-3495  Material: polycarbonate resin  Used when mounting three Nonlighted Switches. Cannot be used with Alternat action type, knot-type Selector, and Ke type Selector because of the structure. Mushroom-type Switch provides an A2Z-3003, three-throw spacer. (See page 26 for those designed A22Z-B101 for DPST-NC. Golden and PST-NO. Color: Black  Control Boxes (Enclosures)  A22Z-B101 Two holes  A22Z-B202 Three holes  A22Z-B203				Red			A227-30TR	-	
Yellow   White   A22Z-30TW   Blue   A22Z-30TW   Elbe used, however, with Half-guard Swite es.									
White Blue A22Z-30TW Blue A22Z-30TA  For A22 For M22 For M22 For mund models For round models For round models For round models  For round models For round models  For round models  For round models  For round models  For round models  A22Z-3495  For round models  A22Z-3495  Waterial: polycarbonate resin  Used when mounting three Nonlighted Switches. Cannot be used with Alternat action type, knob-type Selector, and Ke type Selector because of the structure. Mushroom-type Switch provides and A23003, three-throw spacer. (See page 26 further expansion. The color is black. Color: Black  Control Boxes (Enclosures)  One hole  One hole, yellow box A22Z-B101 A22Z-B201 Two holes  Three holes  A22Z-B102 A22Z-B102 A22Z-B103 A22Z-B200 A22Z-B103 A22Z-B200 A22Z-B103 A22Z-B200 A22Z-B103 A22Z-B200 A22Z-B103 A22Z-B200 A22	Color Caps	3						the (round) Pushbutton Switches. Canno	
For A22   For M22   For multiple   For projection, full-guard, or half-guard models   A22Z-3495				White			A22Z-30TW		
For M22  For round models  A22Z-3495  Material: polycarbonate resin  Used when mounting three Nonlighted Switches. Cannot be used with Alternat action type, knob-type Selector, and Ke type Selector because of the structure. Mushroom-type Switch provides an A2Z 3003, three-throw spacer. (See page 2€ future expansion. The color is black. Color: Black  One hole  One hole  One hole, yellow box  A22Z-B101  A22Z-B201  Two holes  Three holes  A22Z-B103				Blue					
For M22  For round models  A22Z-3495  Used when mounting three Nonlighted Switches. Cannot be used with Alternat action type, knob-type Selector, and Ke type Selector because of the structure. Mushroom-type Switch provides an A2Z 3003, three-throw spacer. (See page 2f Can be plugged into pre-cut panel holes future expansion. The color is black. Color: Black  Cone hole  A22Z-B101  A22Z-B201  Two holes  A22Z-B201  Two holes  A22Z-B102  A22Z-B102  A22Z-B203  Three holes  A22Z-B203	Cana	For A22		For projection, full-guard	d, or half-gua	ard models	A22Z-3490	Material: polycorhonate regin	
Three-throw Spacer   A22Z-3003  Switches. Cannot be used with Alternat action type, knob-type Selector, and Ke type Selector because of the structure. Mushroom-type Switch provides an A22 3003, three-throw spacer. (See page 26 future expansion. The color is black. Color: Black  One hole  One hole  One hole, yellow box  Two holes  Three holes  A22Z-B101  A22Z-B201  A22Z-B102  A22Z-B102  A22Z-B102  A22Z-B103  A22Z-B103  A22Z-B103  A22Z-B203  Plactic connector used to extend a cell.	Caps	For M22		For round models			A22Z-3495	— Materiai. polycarbonate resin	
Hole Plug  Round  Round  A22Z-B330  future expansion. The color is black. Color: Black  Color: Black  One hole  A22Z-B101  A22Z-B201  For those designed A22Z-B1□, DPST-INC Switches cannot be used. A22Z-B2□  A22Z-B2□  Two holes  Two holes  Three holes  A22Z-B102  A22Z-B202  A22Z-B202  A22Z-B203  Register expansion. The color is black. Color: Black  For those designed A22Z-B1□, DPST-INC switches cannot be used. A22Z-B2□  A2	Three-thro	w Spacer					A22Z-3003	Switches. Cannot be used with Alternate action type, knob-type Selector, and Key-	
Control Boxes (Enclosures)  One hole, yellow box  A22Z-B101Y  A22Z-B201Y  A22Z-B201Y  A22Z-B201Y  Two holes  Three holes  A22Z-B103  A22Z-B203  Three holes  A22Z-B201  A22Z-B202  A22Z-B202  A22Z-B203  For those designed A22Z-B1□, DPST-INC or DPST-INC Switches cannot be used. A22Z-B202  A22Z-B202  A22Z-B103  A22Z-B203  A22Z-B203  A22Z-B203  A22Z-B203  A22Z-B203  A22Z-B203  A22Z-B203	Hole Plug		Round			A22Z-3530			
Control Boxes (Enclosures)  One hole, yellow box  A22Z-B101Y A22Z-B201Y A22Z-B201Y  Two holes  A22Z-B102  A22Z-B102  A22Z-B102  A22Z-B202  Three holes  A22Z-B103  A22Z-B203  For those designed A22Z-B1 \( \), DPST-INC Switches cannot be used. A22Z-B20 control Boxes, A22-series a nate operation models, and DPST-INC and SPST-INC at tacts cannot be used. Material: Polycarbonate resin				One halo			A22Z-B101		
One hole, yellow box  A22Z-B201Y A22Z-B201Y Two holes  Three holes  A22Z-B101Y A22Z-B201Y A22Z-B201 A22Z-B202 A22Z-B202 A22Z-B202 Three holes  A22Z-B103 A22Z-B203				OHE HOLE			A22Z-B201	For those designed A22Z-B1□, DPST-NO	
Two holes  Three holes  A22Z-B201Y  A22Z-B102  A22Z-B202  A22Z-B202  A22Z-B103  A22Z-B203  Three holes  A22Z-B203  Rate operation models, and DPST-NO, DPST-NC, and SPST-NO + SPST-NC tacts cannot be used.  Material: Polycarbonate resin				One hale wallow ha	One hale wellow have				
Two holes  Two holes  A22Z-B102  A22Z-B202  Three holes  Three holes  To 9 dia  A22Z-B103  A22Z-B203  DPST-NC, and SPST-NC + SPST-NC of tacts cannot be used.  Material: Polycarbonate resin				One note, yellow bo	^		A22Z-B201Y	A22Z-B2□ Control Boxes, A22-series altronate operation models, and DPST-NO, DPST-NC, and SPST-NO + SPST-NC contacts cannot be used.	
Three holes  A22Z-B202 A22Z-B103 A22Z-B203  To 9 dia  A22Z-B203  Tacts cannot be used. Material: Polycarbonate resin				Two holes			A22Z-B102		
Three holes  A22Z-B103 A22Z-B203  A22Z-B203  A22Z-B203  A22Z-B203  A22Z-B203  A22Z-B203  A22Z-B203  A22Z-B203  A22Z-B203				i wo noies					
Three holes  A22Z-B203  7 to 9 dia  A22Z-3500-1  Plactic connector used to extend a cable				<b>-</b>					
7 to 9 dia A227-3500-1 Plactic connector used to extend a cable				Three holes				-	
Applicable cable	Danie a ata			Applicable cable	7 to 9 dia	a.		Plastic connector used to extend a cable	
Connectors diameter (mm) 9 to 11 dia. A22Z-3500-2 from the Switch Box. (See 9 to 11 dia. A22Z-3500-2 page 25.)	Connectors	•			diameter (mm)		∆227-3500-2	from the Switch Box. (See 9 to 11 dia. A22Z-	

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Item	Appearance	Classification	Model	Remarks
25-dia. Ring			A22Z-R25	Use when mounting to a panel with a 25-dia. hole. For details, refer to page 16. Since this is not attached to the main body, order separately.
30-dia. Resin Attachment		Round	A22Z-A30	Use when mounting to a panel with a 30-dia. hole. For details, refer to page 18.
Lock Plate			A22Z-3380	Use to fix the lever on the Switch.
Simple Protective Cover			A22Z-3700	Prevents foreign matter entering into the Switch from the back of the panel.

■ Specifications: See pages 11 to 12.

■ Dimensions: See page 14.

■ Precautions for correct use: See page 21.

■ Accessories and tools: See pages 8 to 10.

	Item	Appearance		Classification		Model	Remarks
				Bla	ck	A22Z-3443B	
			Without text	Red		A22Z-3443R	
			williout text	Wh	ite	A22Z-3443W	
				Transp	parent	A22Z-3443C	1
				White text on red	0	A22Z-3443R-2	
				background	STOP	A22Z-3443R-4	Attached to the Stan-
	Standard					A22Z-3443B-1	dard-size Legend Plate
	size				START	A22Z-3443B-3	Frame. (See page 26.)
			With text		ON	A22Z-3443B-5	Material: Acrylic
Cnon in			willi text	White text on	OFF	A22Z-3443B-6	
Snap-in				black background	UP	A22Z-3443B-7	
Legend Plates					DOWN	A22Z-3443B-8	
i iaics					POWER ON	A22Z-3443B-9	
					OFF-ON	A22Z-3443B-10	
		1	Without text	Black		A22Z-3453B	Used as an Emergency Stop Switch Legend Plate. (See page 26.)
				Red		A22Z-3453R	
	Large size			White		A22Z-3453W	
				Transparent		A22Z-3453C	Material: Acrylic
	For Emer- gency Stop		DIACK TEXT OIL		with black letters ound	A22Z-3466-1	EMERGENCY STOP is engraved on the plate. Used
Switch		STOP	yellow back- ground	U()_dia_rollnd hlate wi		A22Z-3476-1	as an Emergency Stop Switch Legend Plate
			No print (Rou	ind)		A22Z-3460	
		~~	Ole and all an			A22Z-3460-1	After printing on a film, af-
Character Films	s	Character	Ċ	)	A22Z-3460-2	fix to the indicator plate of	
Character Films		print (Dound)	' SIARI		A22Z-3460-3	the Lighted Pushbutton Switch. (The back is	
		$  \setminus_{-} /$	(Round)	STO	OP	A22Z-3460-4	coated with adhesive.)
		372	No print (Squ	are)		A22Z-3480	

#### Tools

Item	Appearance	Classification	Model	Remarks
Lamp Extractor	5		A22Z-3901	Rubber tool used to easily replace Lamps
Tightening Wrench			A22Z-3905	Used to tighten mounting nuts from the back of the panel and to replace the cap of the Lighted Emergency Switch.
Cap Tightening Tool	6		A22Z-3908	Used for replacing the cap of the Half-guard Pushbutton Switch.
Cap Puller			A3PJ-5080	Used for removing the cap from the Pushbutton of the Square Lighted Pushbutton Switch.

 $\blacksquare$  Specifications: See pages 11 to 12.

■ Precautions for correct use: See page 21.

■ Dimensions: See page 14.

■ Accessories and tools: See pages 8 to 10.

# **Specifications**

#### **Approved Standard Ratings**

UL, cUL (File No. E41515)

6 A at 220 VAC, 10 A at 110 VAC

Note: Only Switch Blocks and Lamp Sockets are recognized by UL. Refer to Page 8 for the model numbers.

#### EN60947-5-1 (Low Voltage Directive)

3 A at 220 VAC

#### CCC (GB/T14048.5)

3 A at 240 VAC, 1.5 A at 24 VDC

#### Ratings

#### **Contacts (Standard Load)**

Contacts	Pated	Rated Current (A)				
(Standard Load)	voltage	Induc- tive load	Resis- tive load	Induc- tive load	Resis- tive load	
	24 VAC	10	10			
	110 VAC	5	10	·		
	220 VAC	3	6			
	380 VAC	2	3			
10A	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. 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: 20 operations/minute 2. Minimum applicable load: 10 mA at 5 VDC

#### **Contacts (Microload)**

Rated applicable load	100 mA at 30 VDC (Resistive load)
Minimum applicable load	1 mA at 5 VDC

#### **LED Indicators**

Rated voltage	Rated current	Operating voltage
6 VAC/VDC		6 VAC/VDC±5%
12 VAC/VDC	8 mA	12 VAC/VDC±5%
24 VAC/VDC		24 VAC/VDC±5%

#### **Voltage-reduction Lighting**

Rated voltage	Rated current	Operating voltage	Applicable lamp (BA9S/Base: 13)
110 VAC	8 mA	100 VAC (95 to 115 V)	LED Lamp
220 VAC	o ma	200 VAC (190 to 230 V)	(A22-24A□)

# **Specifications**

#### **Characteristics**

Туре		Pushbutton Switches		Knob-type Selector Switches		Key-type Selector Switch	Indicator
ltem		Non-lighted models: A22-H A22-S A22-C A22-D	Lighted models: A22L-H A22L-C A22L-D	Non-lighted model: A22S	Lighted model: A22W	Non-lighted model: A22K	M22
Allowable	Mechanical	Momentary operation: 60 operations/minute max.		Manual reset: 30 operations/minute max. Automatic reset: 30 operations/minute max.			
requency	Electrical		30	operations/minute max	ζ.		
nsulation i	resistance			100 MΩ min. (a	at 500 VDC)		
Contact	Standard load			100 m $\Omega$ max. (	(initial value)		
esistance	Microload			100 m $\Omega$ max. (	(initial value)		
Dielectric	Between termi- nals of same polarity		2,500VAC, 50/60Hz for 1min				
strength	Between each terminal and ground	2,500VAC, 50/60Hz for 1min					
/ibration esistance	Malfunction *1	Malfunction *2: 10 to 55 Hz, 1.5-mm double amplitude					
Shock	Destruction	1,000 m/s² max.	1,000 m/s <sup>2</sup> max.	1,000 m/s <sup>2</sup> max.	1,000 m/s <sup>2</sup> max.	1,000 m/s <sup>2</sup> max.	1,000 m/s <sup>2</sup> max
esistance	Malfunction *1	1,000 m/s <sup>2</sup> max.	600 m/s <sup>2</sup> max.	1,000 m/s <sup>2</sup> max.	600 m/s <sup>2</sup> max.	1000 m/s <sup>2</sup> max.	600 m/s <sup>2</sup> max.
Durability	Mechanical		Momentary operation: 5,000,000 operations min.		100,000 operations min.	500,000 operations min.	
Jurability	Electrical	500,000 operations min.		500,000 operations min.	100,000 operations min.	500,000 operations min.	
Ambient op emperatur		−20°C to 70°C	−20°C to 70°C		−20°C to 55°C	−20°C to 70°C	–20°C to 55°C
Ambient op numidity	perating	35% to 85% RH					
Ambient st emperatur		−40°C to 70°C					
Degree of p	protection *3	IP65 (oil-resistant)	IP65	IP65 (oil-resistant)	IP65	IP65 (oil-resistant)	IP65
Electric sho	ock protection	Class II					
PTI tracking cl	haracteristic)	175					
Degree of o	contamination			3 (IEC94	7-5-1)		

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

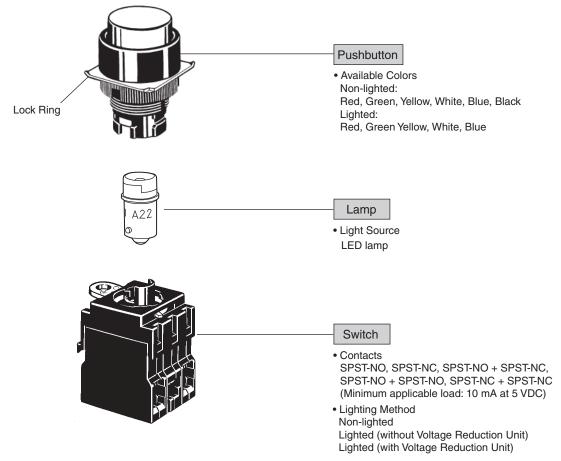
Туре	Pushbutton Switches	Knob-ty	pe Selector	Key-type S	elector Switch
	Lighted Nonlighted Pushbutton Switches	Manual reset	Automatic reset	Manual reset	Automatic reset
Item	A22-H A22-C A22-D A22-S A22L-H A22L-C A22L-D	A22S A22W		A22K	
Total travel force (TTF) max.	29.4 N	0.34 N·m*	0.25 N·m for two notches * 0.34 N·m for three notches *	0.34 N·m*	0.25 N·m for two notches * 0.34 N·m for three notches *
Total travel (TT)	5.5 mm max.	Approx. 90° for two notches (Approx. 45° for three notches)		Approx. 90° for two notches (Approx. 45° for three notches)	
Resetting force (RF) min.		0.34 N⋅m max.*		0.34 N⋅m max.*	

<sup>\*</sup> Rotation torque for Knob-type Selector and Key-type Selector Switches.

<sup>\*1.</sup> Malfunction within 1 ms.
\*2. With no icing or condensation.
\*3. Degree of protection from the front of the panel.

#### **Nomenclature**

#### **Model Structure**

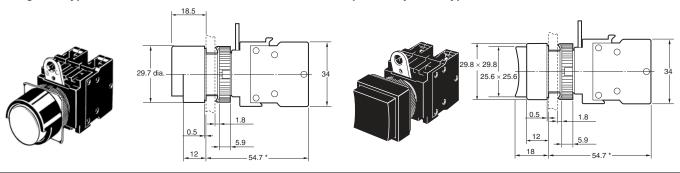


The above illustration shows a lighted model.

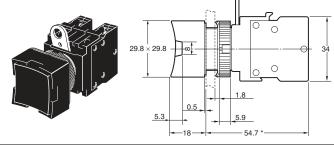
#### Lighted/Non-lighted Pushbutton Switches (The following illustrations are for momentary operation.)

#### Half-guard Type/A22-H/A22L-H

#### Square/Projection type/A22-C/A22L-C

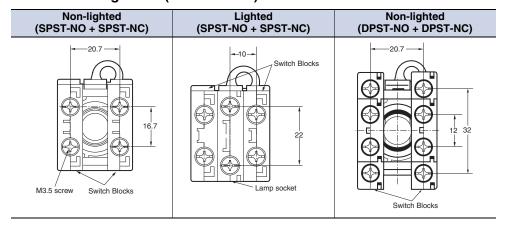


Square/Full-guard Type/A22-D/A22L-D



Note: Lighted models have the same dimensions as shown above, whether they are with or without Voltage Reduction Units. 
\* Alternate operation models are 9.3 mm longer.

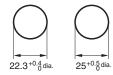
#### **Terminal Arrangement (Bottom View)**



#### **Terminal Connection**

Item	Terminal connection
Non-lighted (SPST-NO + SPST-NC)	BOTTOM VIEW  1 3 4 2 4
Non-lighted (DPST-NO + DPST-NC)	BOTTOM VIEW  (1)  (2)  (2)  (2)  (24)  (14)
Lighted without Voltage Reduction Unit (SPST-NO + SPST-NC)	BOTTOM VIEW  (1) (X) (3) (4) (2) (2) (2) (4)
Lighted with Voltage Reduction Unit (SPST-NO + SPST-NC)	BOTTOM VIEW  (1) (3) (3) (4)

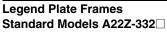
#### **Panel Cutouts**

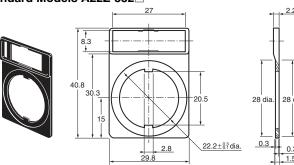


#### Lock ring is provided as a standard item.

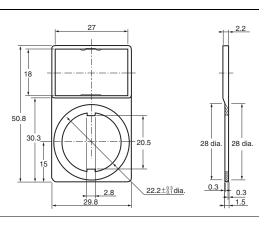
- When applying coating such as paint to the panel, the dimensions should be those after the application of coating.
- Recommended panel thickness: 1 to 5 mm.
- Use an A22Z-R25 Ring when mounting to a panel with 25-mm holes.

#### **Accessories**





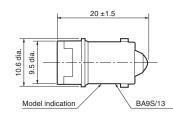




Lamp

LED A22-6□, 12□, 24□

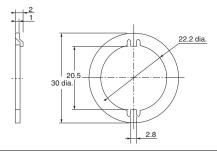




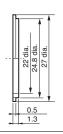
Lock Ring A22Z-3360

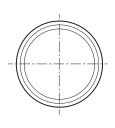
25-dia. Ring A22Z-R25











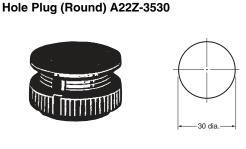
Color Cap A22Z-30T□

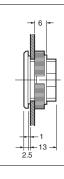








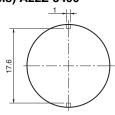


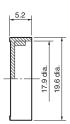


Caps

A22 (for round models) A22Z-3490

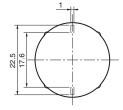


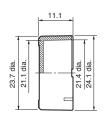




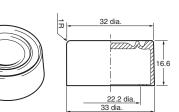
M22 (for round models) A22Z-3495



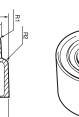


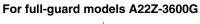


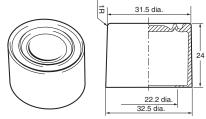
#### Sealing Caps For Flat Models A22Z-3600F



For projection models A22Z-3600T

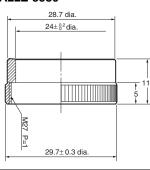






Metallic Bezel Rings For Flat/Projection Models A22Z-3580

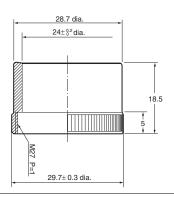




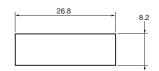
For full-guard models A22Z-3582



For Large Models A22Z-3453□



Snap-in Legend Plates For Standard Models A22Z-3443□-□

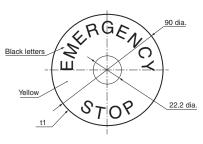


26.8

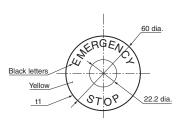
For Emergency-stop Models



A22Z-3476-1 (90 dia.)

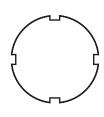


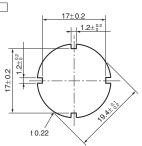
A22Z-3466-1 (60 dia.)



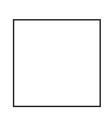
Character Film

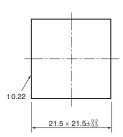
For Round Models A22Z-3460-□





For Square Models A22Z-3480

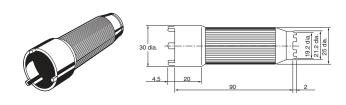




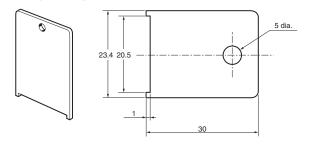
#### Lamp Extractor A22Z-3901

# 11 dia. 8,5 dia. - 18 dia.

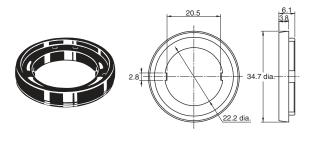
#### **Tightening Wrench A22Z-3905**



Cap Tightening Tool A22Z-3908

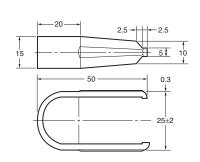


30-dia. Resin Attachment A22Z-A30

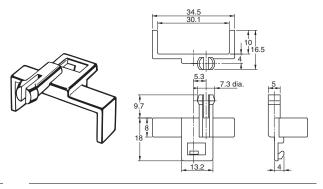


Cap Puller A3PJ-5080

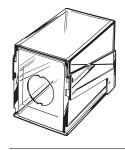


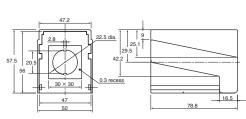


Lock Plate A22Z-3380



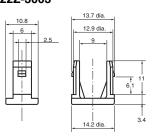
**Simple Protective Cover A22Z-3700** 





Three-throw Spacer A22Z-3003

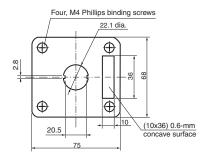


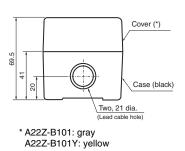


#### Control Box (Enclosure) A22Z-B10□



#### A22Z-B101 (One Hole) A22Z-B101Y



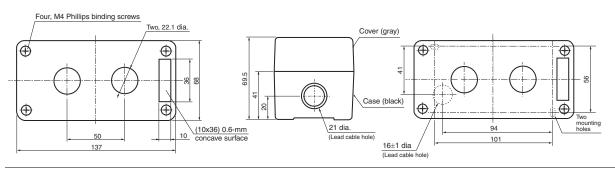


16±1 dia. Two mounting holes

A22Z-B102 (Two Holes)

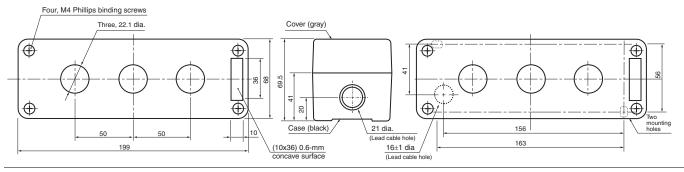
#### **Cable Port Hole (Top View)**

**Cable Port Hole (Top View)** 



#### A22Z-B103 (Three Holes)

#### **Cable Port Hole (Top View)**



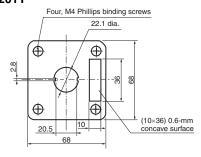
#### (Panel Mounting Hole)

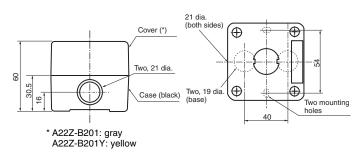


#### Control Box A22Z-B20□

#### A22Z-B201 (One Hole) A22Z-B201Y

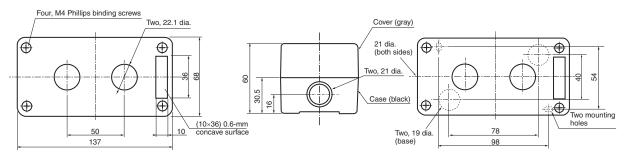
#### **Cable Port Hole (Top View)**





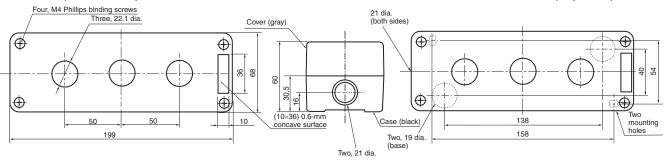
#### A22Z-B202 (Two Holes)

#### **Cable Port Hole (Top View)**



### A22Z-B203 (Three Holes)

#### **Cable Port Hole (Top View)**



#### (Panel Mounting Hole)



#### **Safety Precautions**

#### Refer to Safety Precautions for All Pushbutton Switches/Indicators.

#### **MARNING**

Do not apply a voltage between the LED and the terminal that is greater than the rated voltage. If the LED is broken, the Operation Units may pop out. Always turn OFF the power and wait for 10 minutes before replacing the incandescent lamp. If the lamp is replaced immediately after the power is turned OFF, the remaining heat may cause burns.

#### **Precautions for Correct Use**

#### Mounting

- Do not perform wiring with power supplied to the Switch. Do not touch the terminals or other charged parts of the Switch while power is being supplied. Doing so may result in electric shock.
- Always make sure that the power is turned OFF before mounting, removing, or wiring the Switch, or performing maintenance.
   Do not tighten the mounting ring more than necessary using tools such as pointed-nose pliers. Doing so will damage the mounting ring.

The tightening torque is 0.98 to 1.96 N·m.

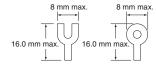
- Recommended panel thickness: 1 to 5 mm.
- When mounting the caps after changing the LED or the caps, tighten the caps at a tightening torque of 0.49 tp 0.78 N·m.

#### Wiring

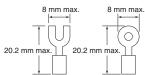
- Terminal screws must be Phillips or slotted M3.5 screws with a square washer.
- The tightening torque is 1.08 to 1.27 N·m.
- Solid wires, stranded wires, and crimp terminals can be connected to the Switch.

#### **Applicable Wire Size**

Stranded wire: 2 mm<sup>2</sup> max. Solid wire: 1.6 dia. max. Bare Crimp Terminals



Crimp Terminals with Insulating Sheath



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

#### **Operating Environment**

- The IP65 model is designed with a degree of protection so that it
  will not sustain damage if it is subjected to water from any direction
  to the front of the panel.
- This switch is intended for indoor use only.
  Using the Switch outdoors will result in failure.

#### **LED**

- The LED current-limiting resistor is built-in, so internal resistance is not required.
- If commercially available LEDs are used, select the ones that meet the following conditions:

Base: BA9S/13

Overall length: 26 mm max. Power consumption: 2.6 W max.

When DC-specific LEDs are used, wire the Switch so that the X1 terminal is positive.

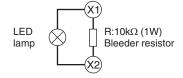
Mis-lighting of the LED

The LED lights with approx. 0.1 mA or less of micro-current. Take a countermeasure like adding a resistor to prevent mis-lighting in parallel to the LED.

The micro-current varies with the machine (leak current or stray capacity between cables, etc.). Select resistance value and allowable power consumption that meet the actual current.

#### (Circuit example)

In case of using 24 VAC/VDC, Direct lighting



#### **Others**

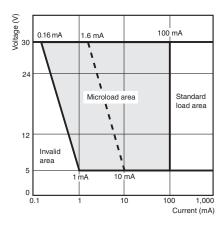
- If the panel is to be finished with coating, etc., make sure that the panel meets the specified dimensions after the coating.
- Do not subject the Switch to extreme shock or vibration. Doing so will cause malfunctions and damage to the Switch.

#### **Using the Microload**

 Insert a contact protection circuit, if necessary, to prevent the reduction of life expectancy due to extreme wear on the contacts caused by loads where inrush current occurs when the contact is opened and closed.

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

The equation,  $\lambda$  60 = 0.5 x 10<sup>-6</sup>/operations indicates that the estimated malfunction rate is less than 1/2,000,000 operations with a reliability level of 60%.

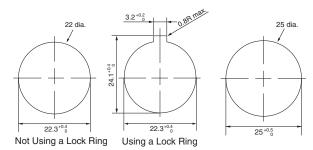


#### **Application**

#### **Mounting to the Panel**

#### **Panel Hole Dimensions**

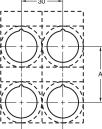
- Panel hole dimensions are given below.
- Recommended panel thickness: 1 to 5 mm.



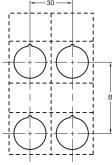
- For 25-dia. holes, always use 25-dia. Rings. (Since the cutout dimensions are large, IP65 cannot be guaranteed unless 25-dia. Rings are used.)
- If outer surface treatment such as coating is performed for the panel, the panel dimensions after outer surface treatment must meet the specified panel dimensions.

#### Matrix Installation

 The following panel hole dimensions apply when Switch Unit and the Standard-size Legend Plate Frame and Lock Ring are mounted, and lead wires are connected directly to the Switch Block.



2. The following panel hole dimensions apply when the Large-size Legend Plate Frame is mounted, and when crimp terminals are connected to the Switch Block terminals.



Pitches A and B between the centers of the mounting holes are as follows:

#### For 1. above:

Switch Blocks	Α
A22-10, A22-10S A22-01, A22-01S	45 mm min.
A22-20, A22-20S, A22-02 A22-02S, A22-11, A22-11S	55 mm min.

#### For 2. above:

Type of crimp terminal	Switch Blocks	В
Davis seigen tauminala	A22-10, A22-10S A22-01, A22-01S	51 mm min.
Bare crimp terminals	A22-20, A22-20S, A22-02 A22-02S, A22-11, A22-11S	61 mm min.
Crimp terminals with insulating sheath	A22-10, A22-10S A22-01, A22-01S	60 mm min.
	A22-20, A22-20S, A22-02 A22-02S, A22-11, A22-11S	70 mm min.

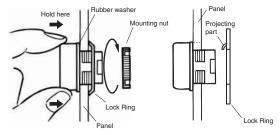
Note: 1. The above dimensions are the minimum dimensions for when the wires described under Applicable Wire Size on page 21 are used. If a different wires are used, the wiring dimensions may be different so determine an appropriate pitch before setup.

With pushbuttons of external dimensions greater than 30 mm, set the
pitch according to the dimensions. (When using matrix installation for
the A22-M□, mount with a pitch of 40 mm instead of 30 mm in the
diagram above.)

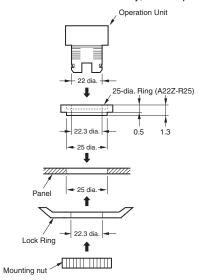
#### **Mounting the Operation Unit on the Panel**

- 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.

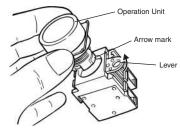


 When the panel cutout dimension is 25 dia., remove the supplied rubber washer and mount the 25-dia. Ring as shown below. (Since the A22Z-R25 is not attached to the main body, order separately.)



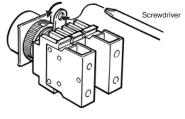
#### Mounting the Switch on the Pushbutton Unit

 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

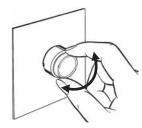
• Move the lever in the direction indicated by the arrow in the following figure, then pull the Pushbutton Unit or the Switch Blocks. Since the lever has a hole with an inside diameter of 6.5 mm, the lever can be moved in the specified direction by inserting a screwdriver into the hole and then moving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



#### Mounting/Replacing the Color Cap

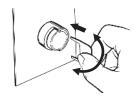
#### Projection, Fall-guard

Grip and rotate the Color Cap with your fingers.



#### **Half-guard Indicators**

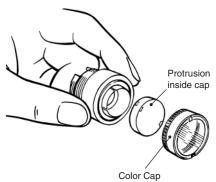
• Put the tips of the Cap Tightening Tool (A22Z-3908) into the Color Cap slot and turn the Tool.



#### **Assembling the Cap**

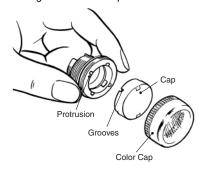
#### **Lighted Pushbutton Switch**

 Mount the Color Cap so that the protrusions inside the cap fit into the grooves in the Pushbutton Unit.



#### Indicator

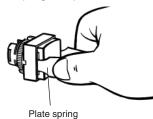
• Mount the Color Cap so that the protrusions inside the Pushbutton Unit fit into the grooves in the cap.



#### Square Pushbutton/Indicator

• Square Pushbutton/Indicator

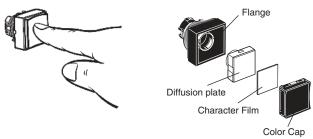
Insert the protruding tip of the Cap Puller (A3PJ-5080) into the Cap slot, hold the plate spring, and pull them to remove the Color Cap.



#### • Mounting the Color Cap:

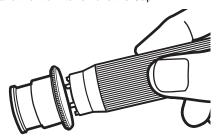
Mount the Color Cap on the flange and firmly push the Color Cap. When the Color Cap is inserted, check whether it operates properly. When replacing the Lamp, remove the Color Cap and diffusion plate with fingers or Cap Puller.

Attach the Character Film properly so that it fits inside the protruding part of the diffusion plate. Then, match the diffusion plate to the square flange and insert the Cap.



#### **Emergency Stop Switch**

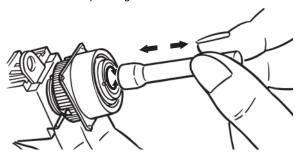
• Insert the protrusion of the Tightening Wrench (A22Z-3905) into the Cap slot and then turn to remove the Cap.



#### Installing/Replacing the Lamp

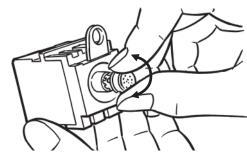
#### Installing/Replacing from the Panel Surface

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



#### Installing/Replacing on the Switch

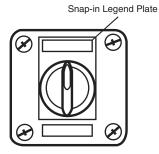
• Grip the lamp with your fingers, then rotate the lamp while pressing it against the Switch.



#### **Control Box (Enclosure)**

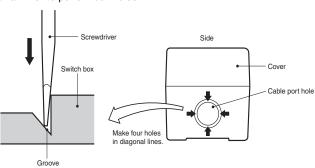
#### Mounting the Switch

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



#### Creating a Cable Port Hole

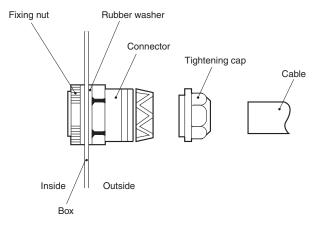
Place the tip of a screwdriver on the surface where the cable port hole is to be created with the cover attached and strike the screwdriver with a hammer to punch four holes.



#### **Securing the Connector Cable**

- 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.

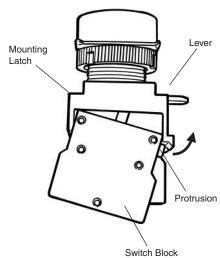
Cable diameter	Connector
7 to 9 dia.	A22Z-3500-1
9 to 11 dia.	A22Z-3500-2



#### **Switch Blocks**

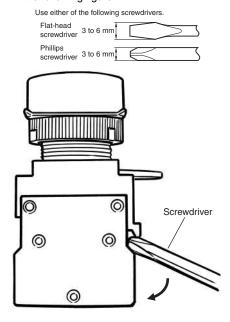
#### Installing the Switch Blocks

 Hook the small protrusion on the Switch Block into the groove on the Mounting Latch 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

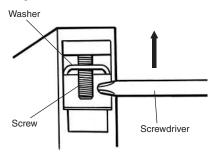
 Insert a screwdriver between the Mounting Latch and the Switch Block, then push down the screwdriver in the direction indicated by the arrow in the following figure.



#### 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.



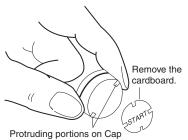
#### **Engraving**

- Engrave the characters on the surface on the Cap. Make sure that the characters are aligned parallel to the imaginary line connecting the two protruding portions to the left and right of the Cap.
- The characters must not be engraved deeper than 0.5 mm. Apply an alcohol-based paint coating, such as melamine, alkyd, or acrylic resin paint coating, to the engraved characters.



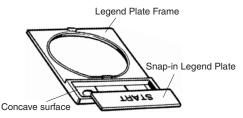
#### **Affixing Character Film**

 Hold the Cap, remove the cardboard on the Film, and attach the Film to the Cap. Make sure that the protruding portions of the Cap engage he cutout portions of the Film and that the characters are aligned parallel to the imaginary line connecting the two protruding portions to the left and right of the Cap.

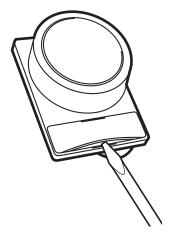


#### Mounting and Dismounting Snap-in Legend

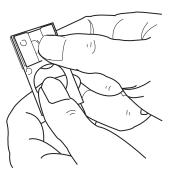
- Press and secure the Snap-in Legend Plate onto the Legend Plate Frame.
- The direction of the characters will vary with the mounting direction of the control panel if the Switch is a knob or key selector model.



 To easily remove the Snap-in Legend Plate from the Legend Plate Frame mounted to the panel, insert a Tool with a thin tip into the space between the Snap-in Legend Plate and the Legend Plate Frame.



- The Snap-in Legend Plate is easily removed by pressing the Snap-in Legend Plate from the back of the Legend Plate Frame.
- The Legend Plate Frame is made of acrylic resin, which is easily damaged by shock. Be sure to handle the Legend Plate Frame with care.



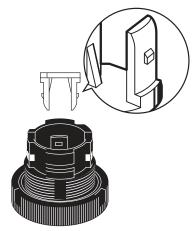
#### **Engraving Method**

#### Material: Acrylic

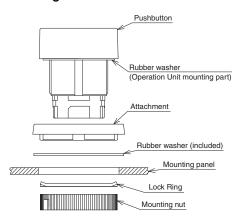
- Engrave the characters directly on the matted side of the Snap-in Legend Plate.
- The characters must be engraved no deeper than 0.5 mm.
- Apply alcohol-based paint coating to the engraved characters.
- If the Snap-in Legend Plate is transparent, engrave the mirrorwritten characters on the back of the Snap-in Legend Plate and apply paint coating to the characters. Then apply paint coating of a different color to the remaining part of the Snap-in Legend Plate.

#### **Mounting Three-throw Spacer**

Press and secure the two protruding portions of the Three-throw Spacer to the two indented portions of the inner side of the control panel.



#### Mounting the 30-dia. Resin Attachment



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