

A22




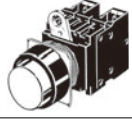


Install in 22-dia. or 25-dia. Panel Cutout (When Using a Ring)


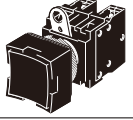


- Lever for easily mounting and removing the Switch Unit.
- Increase wiring efficiency with three-row mounting of Switch Blocks.
- Finger protection mechanism on Switch Unit provided as a standard feature.
- Use 25-dia. ring to install in 25-dia. panel cutouts.
- Mounted using either open-type (fork-type)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



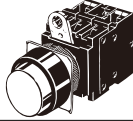
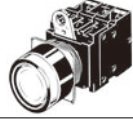
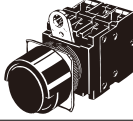
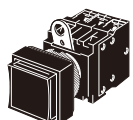
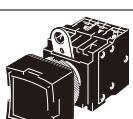
List of Models

Non-lighted Pushbutton Switches

Appearance		Model number
Round	Flat 	A22-F
	Projected 	A22-T
	Full guard 	A22-G
	Half guard 	A22-H

Appearance		Model number
Square	Projected 	A22-C
	Guard 	A22-D
Mushroom	Mushroom Small (30 dia.) 	A22-S
	Mushroom Medium (40 dia.) 	A22-M

Lighted Pushbutton Switches

Appearance		Model number
Round	Projected 	A22L-T
	Full guard 	A22L-G
	Half guard 	A22L-H
Square	Projected 	A22L-C
	Full guard 	A22L-D

Model Number Structure

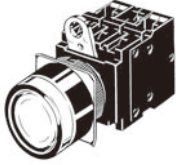
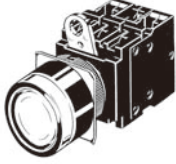
Model Number Legend Shipped as a set which includes the Pushbutton, Lamp (lighted type only), and Switch.
For information on combinations, refer to *Ordering Information* on pages 3 to 6.

(1) (2) (3) (4) (5) (6)
A 22 **L** - **T** **R** - **12A** - **10** **M**

(1) Type		(2) Flange Shape		(3) Illumination Color		(4) Light Source			(5) Contacts		
Code	Description	Code	Description	Code	Description	Code	Operating Voltage		Code	Description	
No symbol	Non-lighted	F	Flat	R	Red	No symbol	Non-lighted		10	SPST-NO	
L	Lighted	T	Projected	G	Green	6D	LED	6 VDC	01	SPST-NC	
		G	Full-guard	Y	Yellow	6A		6 VAC	11	SPST-NO + SPST-NC	
		H	Half-guard	W	White	12A		12 VAC/VDC	20	DPST-NO	
		C	Projected	A	Blue	24A		24 VAC/VDC	02	DPST-NC	
		D	Full-guard	B	Black*	5	Incan-descent lamp	5 VAC/VDC	Note: 1. The contact ratings are for standard loads. For microloads, select from the accessories on page 10. 2. Refer to page 13 for contact ratings.		
		S	Mushroom Small (30 dia.)	* For non-lighted type only		12		12 VAC/VDC			
		M	Mushroom Medium (40 dia.)			24		24 VAC/VDC			
		(2) Flange Shape				(4) Light Source					
		Lighted				With Voltage Reduction Unit					
		Code	Description			Code	Operating Voltage				
		T	Projection			T1	LED	100 VAC			
		G	Full-guard			T2		200 VAC			
		H	Half-guard							(6) Switch Action	
		C	Projection							Code	Description
		D	Full-guard							M	Momentary
										A	Alternate
										Note: 1. Momentary operation: Self-resetting 2. Alternate operation: Self-holding The Socket Unit holds and the Operation Unit resets.	

Ordering Information

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

Appearance	Output	Lighting	Operation Operating voltage	Momentary operation (self-resetting)	Alternate operation (self-holding)	Illumination color
				Set	Set	
Round/Full-guard type LED lighting (without Voltage Reduction Unit) A22L-G 	SPST-NO	LED	6 VDC	A22L-G□-6D-10M	A22L-G□-6D-10A	R (red) Y (yellow) G (green) W (white) A (blue)
			6 VAC	A22L-G□-6A-10M	A22L-G□-6A-10A	
			12 VAC/VDC	A22L-G□-12A-10M	A22L-G□-12A-10A	
			24 VAC/VDC	A22L-G□-24A-10M	A22L-G□-24A-10A	
	SPST-NC		6 VDC	A22L-G□-6D-01M	A22L-G□-6D-01A	
			6 VAC	A22L-G□-6A-01M	A22L-G□-6A-01A	
			12 VAC/VDC	A22L-G□-12A-01M	A22L-G□-12A-01A	
			24 VAC/VDC	A22L-G□-24A-01M	A22L-G□-24A-01A	
	SPST-NO + SPST-NC		6 VDC	A22L-G□-6D-11M	A22L-G□-6D-11A	
			6 VAC	A22L-G□-6A-11M	A22L-G□-6A-11A	
			12 VAC/VDC	A22L-G□-12A-11M	A22L-G□-12A-11A	
			24 VAC/VDC	A22L-G□-24A-11M	A22L-G□-24A-11A	
	SPST-NO + SPST-NO		6 VDC	A22L-G□-6D-20M	A22L-G□-6D-20A	
			6 VAC	A22L-G□-6A-20M	A22L-G□-6A-20A	
			12 VAC/VDC	A22L-G□-12A-20M	A22L-G□-12A-20A	
			24 VAC/VDC	A22L-G□-24A-20M	A22L-G□-24A-20A	
	SPST-NC + SPST-NC		6 VDC	A22L-G□-6D-02M	A22L-G□-6D-02A	
			6 VAC	A22L-G□-6A-02M	A22L-G□-6A-02A	
			12 VAC/VDC	A22L-G□-12A-02M	A22L-G□-12A-02A	
			24 VAC/VDC	A22L-G□-24A-02M	A22L-G□-24A-02A	
Round/Full-guard type LED voltage-reduction lighting (with Voltage Reduction Unit) A22L-G 	SPST-NO	100 VAC	A22L-G□-T1-10M	A22L-G□-T1-10A		
		200 VAC	A22L-G□-T2-10M	A22L-G□-T2-10A		
	SPST-NC	100 VAC	A22L-G□-T1-01M	A22L-G□-T1-01A		
		200 VAC	A22L-G□-T2-01M	A22L-G□-T2-01A		
	SPST-NO + SPST-NC	100 VAC	A22L-G□-T1-11M	A22L-G□-T1-11A		
		200 VAC	A22L-G□-T2-11M	A22L-G□-T2-11A		
	SPST-NO + SPST-NO	100 VAC	A22L-G□-T1-20M	A22L-G□-T1-20A		
		200 VAC	A22L-G□-T2-20M	A22L-G□-T2-20A		
	SPST-NC + SPST-NC	100 VAC	A22L-G□-T1-02M	A22L-G□-T1-02A		
		200 VAC	A22L-G□-T2-02M	A22L-G□-T2-02A		

Note: The contact ratings are for standard loads.

Specifications

Approved Standard Ratings

UL, cUL (File No. E41515)

6 A at 220 VAC, 10 A at 110 VAC

EN60947-5-1 (Low Voltage Directive)

3 A at 220 VAC

CCC (GB14048.5)

3 A at 240 VAC, 1.5 A at 24 VDC

Ratings

Contacts (Standard Load)

Contacts (Standard Load)	Rated voltage	Rated current (A)			
		Inductive load	Resistive load	Inductive load	Resistive load
10A	24 VAC	10	10	---	---
	110 VAC	5	10		
	220 VAC	3	6		
	380 VAC	2	3		
	440 VAC	1	2		
	24 VDC	---	---	1.5	10
	110 VDC			0.5	2
	220 VDC			0.2	0.6
	380 VDC			0.1	0.2

Note: 1. 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	50 mA at 24 VDC (Resistive load)
Minimum applicable load	1 mA at 5 VDC

LED Indicators

Rated voltage	Rated current	Operating voltage
6 VDC	60 mA (20 mA)	6 VDC±5%
6 VAC	60 mA (20 mA)	6 VAC±5%
12 VAC/VDC	30 mA (10 mA)	12 VAC/VDC±5%
24 VAC/VDC	30 mA (10 mA)	24 VAC/VDC±5%

Note: Values in parentheses are for blue Pushbuttons.

Super-bright LED Indicator

Rated voltage	Rated current	Operating voltage
24 VAC/VDC	15 mA	24 VAC/VDC±5%

Incandescent Lamp

Rated voltage	Rated current	Operating voltage
6 VAC/VDC	200 mA	5 V
14 VAC/VDC	80 mA	12 V
28 VAC/VDC	40 mA	24 V

Voltage-reduction Lighting

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

Specifications

Characteristics

Type		Pushbutton Switches		Emergency Stop Switches		Knob-type Selector Switches		Key-type Selector Switch	Indicator
Item		Non-lighted models: A22-F A22-T A22-G A22-H A22-S A22-M A22-C A22-D	Lighted models: A22L-T A22L-G A22L-H A22L-C A22L-D	Non-lighted model: A22E	Lighted model: A22EL	Non-lighted model: A22S	Lighted model: A22W	Non-lighted model: A22K	M22
		Allowable operating frequency	Mechanical	Momentary operation: 60 operations/minute max.		30 operations/minute max.		Manual reset: 30 operations/minute max. Automatic reset: 30 operations/minute max.	
Electrical	30 operations/minute max.							---	
Insulation resistance		100 M Ω min. (at 500 VDC)							
Dielectric strength	Between terminals of same polarity	2,500VAC, 50/60Hz for 1min							
	Between each terminal and ground	2,500VAC, 50/60Hz for 1min							
Vibration resistance	Malfunction *1	Malfunction *2: 10 to 55 Hz, 1.5-mm double amplitude							
Shock resistance	Destruction	1,000 m/s ²	1,000 m/s ²	1,000 m/s ²		1,000 m/s ²	1,000 m/s ²	1,000 m/s ²	1,000 m/s ²
	Malfunction *1	1,000 m/s ² max.	600 m/s ² max.	250 m/s ² max.		1,000 m/s ² max.	600 m/s ² max.	1000 m/s ² max.	600 m/s ² max.
Durability	Mechanical	Momentary operation: 5,000,000 operations min.		300,000 operations min.		500,000 operations min.	100,000 operations min.	500,000 operations min.	---
	Electrical	500,000 operations min.		300,000 operations min.		500,000 operations min.	100,000 operations min.	500,000 operations min.	---
Ambient operating temperature *2		-20°C to 70°C	-20°C to 55°C	-20°C to 70°C	-20°C to 55°C	-20°C to 70°C	-20°C to 55°C	-20°C to 70°C	-20°C to 55°C
Ambient operating humidity		35% to 85% RH							
Ambient storage temperature *2		-40°C to 70°C							
Degree of protection *3		IP65 (oil-resistant)	IP65	IP65 (oil-resistant)	IP65	IP65 (oil-resistant)	IP65	IP65 (oil-resistant)	IP65
Electric shock protection class		Class II							
PTI (tracking characteristic)		175							
Degree of contamination		3 (IEC947-5-1)							

*1. Malfunction within 1 ms.

*2. With no icing or condensation.

*3. Degree of protection from the front of the panel.

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

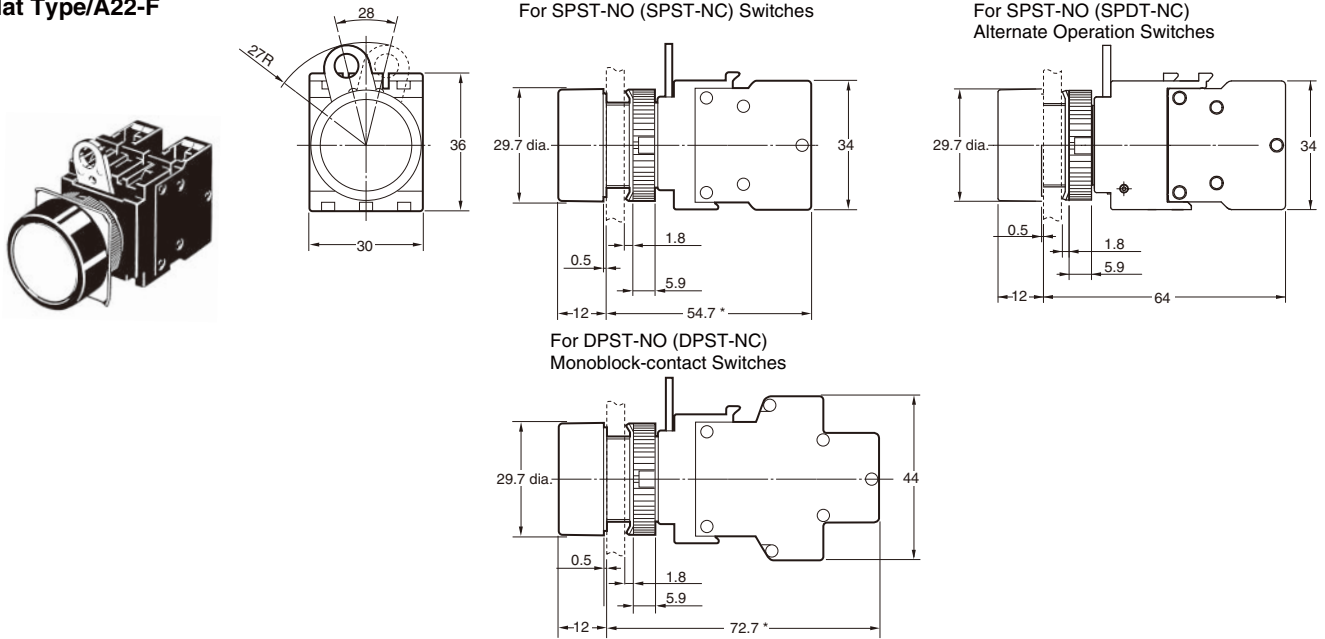
Item	Type	Pushbutton Switches	Emergency Stop Switches	Knob-type Selector		Key-type Selector Switch		
		Lighted Nonlighted Pushbutton Switches	Push-lock turn reset system/ Push-lock, key reset	Push-pull	Manual reset	Automatic reset	Manual reset	Automatic reset
		A22-F A22-T A22-G A22-H A22-C A22-D A22-S A22-M A22L-T A22L-G A22L-H A22L-C A22L-D	A22E A22EL A22E-□K	A22E-□P	A22S A22W		A22K	
Total travel force (TTF) max.		29.4 N	44.1 N	58.8 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.	10±1 mm	5.5±1 mm	Approx. 90° for two notches (Approx. 45° for three notches)		Approx. 90° for two notches (Approx. 45° for three notches)	
Resetting force (RF) min.		---	0.25 N·m max.*	58.8N max.	0.34 N·m max.*	---	0.34 N·m max.*	---

* Rotation torque for Emergency Stop Pushbutton, Knob-type Selector, and Key-type Selector Switches.

Dimensions

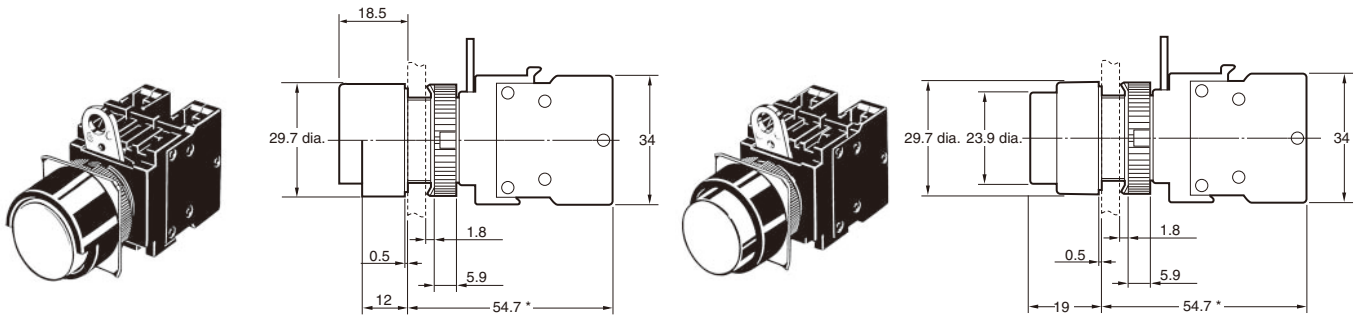
Lighted/Non-lighted Pushbutton Switches (The following illustrations are for momentary operation.)

Flat Type/A22-F



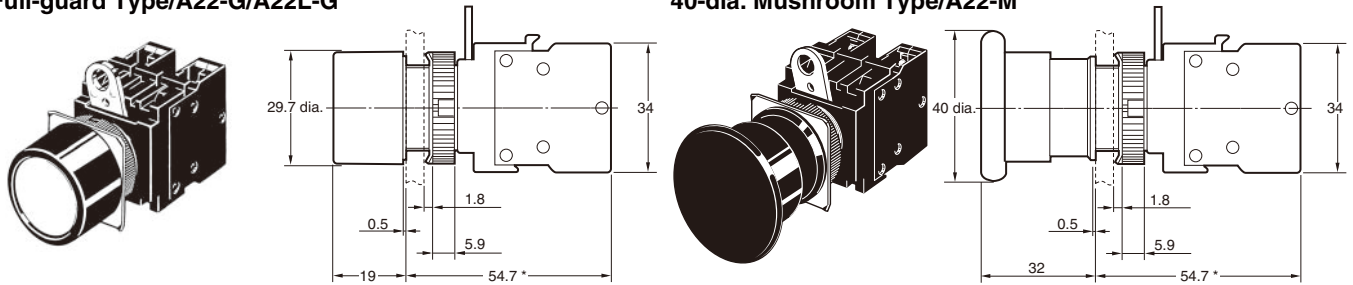
Half-guard Type/A22-H/A22L-H

Projection Type/A22-T/A22L-T



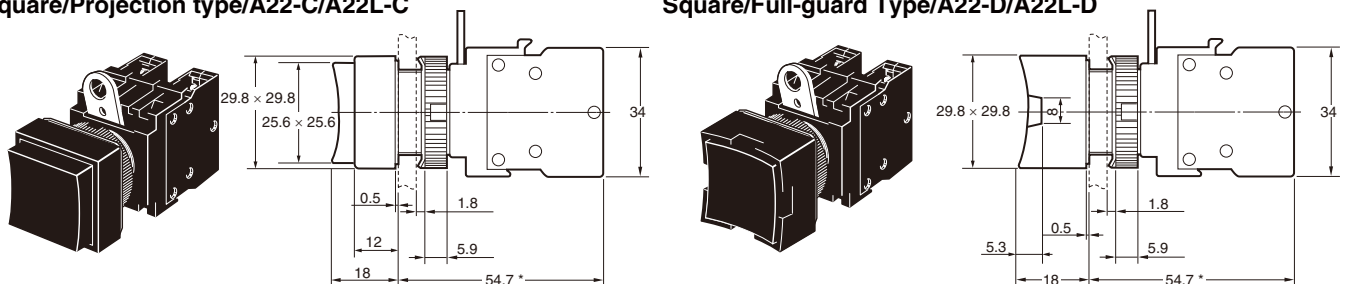
Full-guard Type/A22-G/A22L-G

40-dia. Mushroom Type/A22-M



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

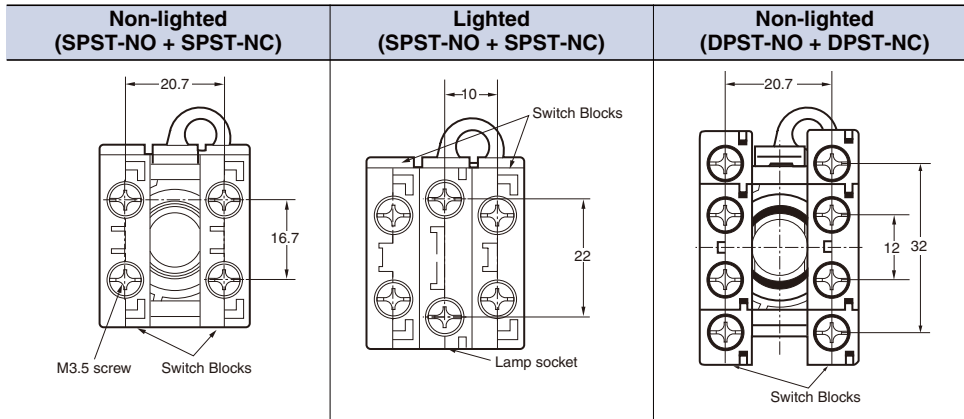
Square/Full-guard Type/A22-D/A22L-D



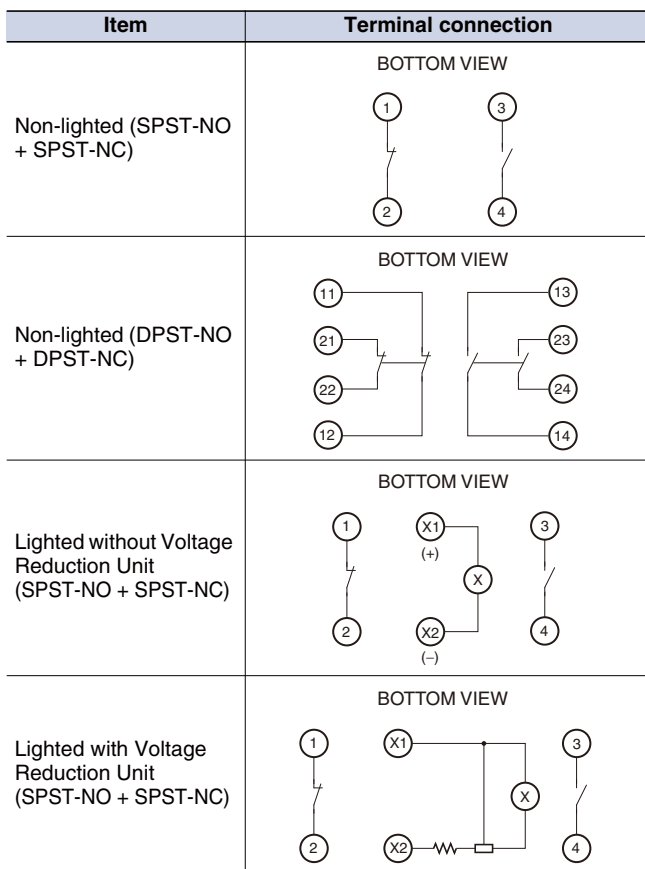
Note: Lighted models have the same dimensions as shown above, whether they are with or without Voltage Reduction Units.
* Alternate operation models are 9.3 mm longer.

Dimensions

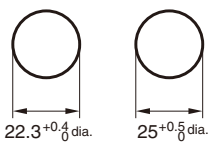
Terminal Arrangement (Bottom View)



Terminal Connection



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.