

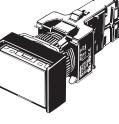
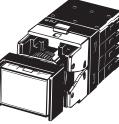
## Cylindrical 16-dia. Indicator

- Same basic design as the A16 Pushbutton Switch.



Refer to *Safety Precautions for All Pushbutton Switches/Indicators and Safety Precautions* on page 11.

## List of Models

	Appearance	Model
Solder terminals	Rectangular	 M16-J
	Square	 M16-A
	Round	 M16-T
Voltage-reduction lighting		M16-□
Screw-less Clamp		M16-□

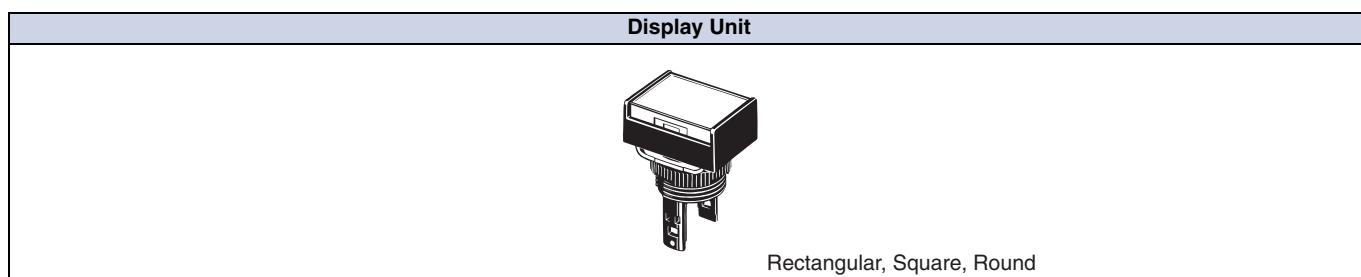
## Model Number Structure

**Model Number Legend** ..... The model numbers used to order sets of Units are illustrated below. One set comprises the Display, Case, Lamp, and Socket.

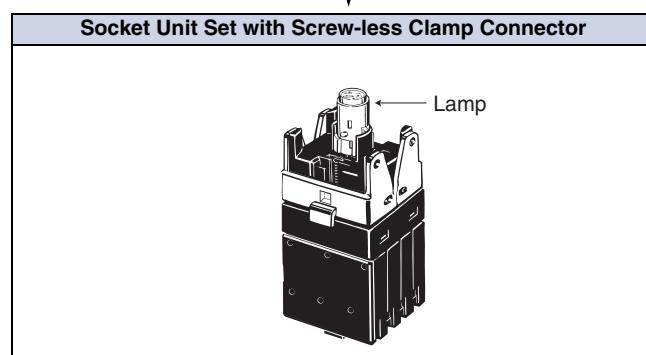
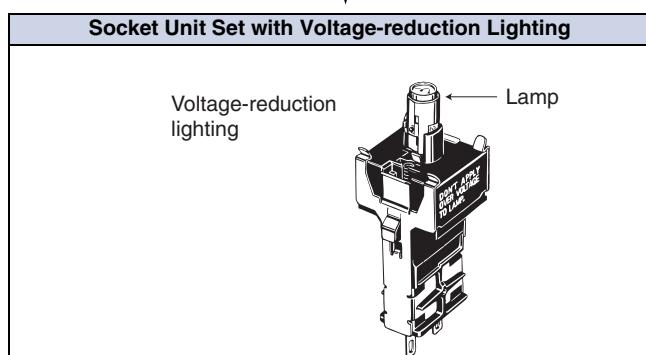
For information on combinations, refer to *Ordering Information* on the following pages.

(1)	(2)	(3)	(4)	(5)	(5) Terminal Type																																												
M	1	6	5	T	<table border="1"> <tr> <td>Symbol</td><td>Terminal type</td></tr> <tr> <td>No symbol</td><td>Solder terminals</td></tr> <tr> <td>S</td><td>Screw-less Clamp</td></tr> </table>	Symbol	Terminal type	No symbol	Solder terminals	S	Screw-less Clamp																																						
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<ul style="list-style-type: none"> <li>• Color illuminated models are also available (see page 4).</li> <li>• Order the parts separately.</li> </ul>					<b>Voltage Reduction Unit (24-V Built-in LED)</b>																																												
<table border="1"> <tr> <th>Symbol</th><th>Type</th><th>Operating voltage</th><th>Rated voltage</th></tr> <tr> <td>T1</td><td rowspan="2">LED</td><td>100/110 VAC/VDC</td><td>110 VAC/VDC</td></tr> <tr> <td>T2</td><td>200/220 VAC/VDC</td><td>220 VAC/VDC</td></tr> </table>					Symbol	Type	Operating voltage	Rated voltage	T1	LED	100/110 VAC/VDC	110 VAC/VDC	T2	200/220 VAC/VDC	220 VAC/VDC	<ul style="list-style-type: none"> <li>• Solder terminals are available only with 100-V models.</li> <li>• Screw-less clamp connectors are used for 200-V models.</li> </ul>																																	
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**Sets** ..... Select an Operation Unit Set (Operation Unit and Case) and a Socket Unit Set (Lamp and Socket Unit).



### Lighted Models



## Ordering Information

**Ordering as a Set** ..... The model numbers used to order sets of Units are given in the following tables. One set comprises the Display, Case, Lamp, and Socket.

### M16□-J (Rectangular) Models

#### Solder Terminal Models

Appearance	Lighting	Degree of protection	IP40	IP65 oil-resistant	Display color symbol *
Rectangular (M16-J) 	LED without Voltage Reduction Unit	5 VDC	M16-J□-5D	M165-J□-5D	R: red Y: yellow G: green A: blue W: white PY: pure yellow PW: pure white
		12 VAC/VDC	M16-J□-12D	M165-J□-12D	
		24 VAC/VDC	M16-J□-24D	M165-J□-24D	
	Incandescent lamp	5 VAC/VDC	M16-J□-5	M165-J□-5	
		12 VAC/VDC	M16-J□-12	M165-J□-12	
		24 VAC/VDC	M16-J□-24	M165-J□-24	

\* Enter the desired color symbol into the box in the model number.

### M16□-A (Square) Models

#### Solder Terminal Models

Appearance	Lighting	Degree of protection	IP40	IP65 oil-resistant	Display color symbol *
Square (M16-A) 	LED without Voltage Reduction Unit	5 VDC	M16-A□-5D	M165-A□-5D	R: red Y: yellow G: green A: blue W: white PY: pure yellow PW: pure white
		12 VAC/VDC	M16-A□-12D	M165-A□-12D	
		24 VAC/VDC	M16-A□-24D	M165-A□-24D	
	Incandescent lamp	5 VAC/VDC	M16-A□-5	M165-A□-5	
		12 VAC/VDC	M16-A□-12	M165-A□-12	
		24 VAC/VDC	M16-A□-24	M165-A□-24	

\* Enter the desired color symbol into the box in the model number.

### M16□-T (Round) Models

#### Solder Terminal Models

Appearance	Lighting	Degree of protection	IP40	IP65 oil-resistant	Display color symbol *
Round (M16-T) 	LED without Voltage Reduction Unit	5 VDC	M16-T□-5D	M165-T□-5D	R: red Y: yellow G: green A: blue W: white PY: pure yellow PW: pure white
		12 VAC/VDC	M16-T□-12D	M165-T□-12D	
		24 VAC/VDC	M16-T□-24D	M165-T□-24D	
	Incandescent lamp	5 VAC/VDC	M16-T□-5	M165-T□-5	
		12 VAC/VDC	M16-T□-12	M165-T□-12	
		24 VAC/VDC	M16-T□-24	M165-T□-24	

Note: Neon lamps are not available with models that are ordered as a set. They must be ordered individually if required.

\* Enter the desired color symbol into the box in the model number.

Individual models: Refer to pages 4 to 7.

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

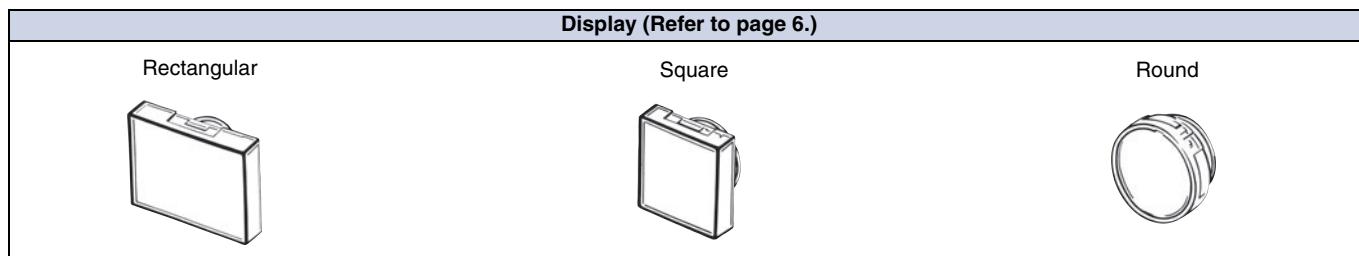
■ Accessories, replacements, and tools: Refer to the A16.

■ Ratings and characteristics: Refer to the A16.

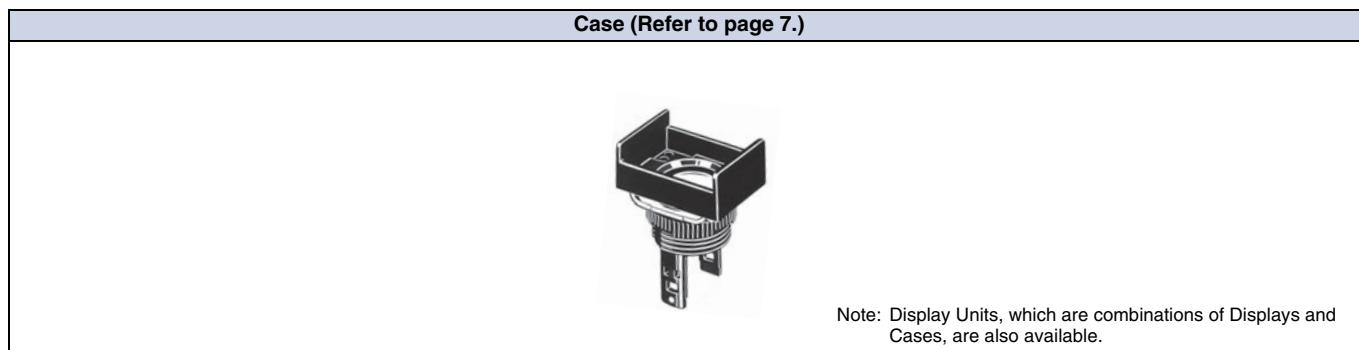
■ Dimensions: Refer to pages 9 to 10.

## Ordering Information

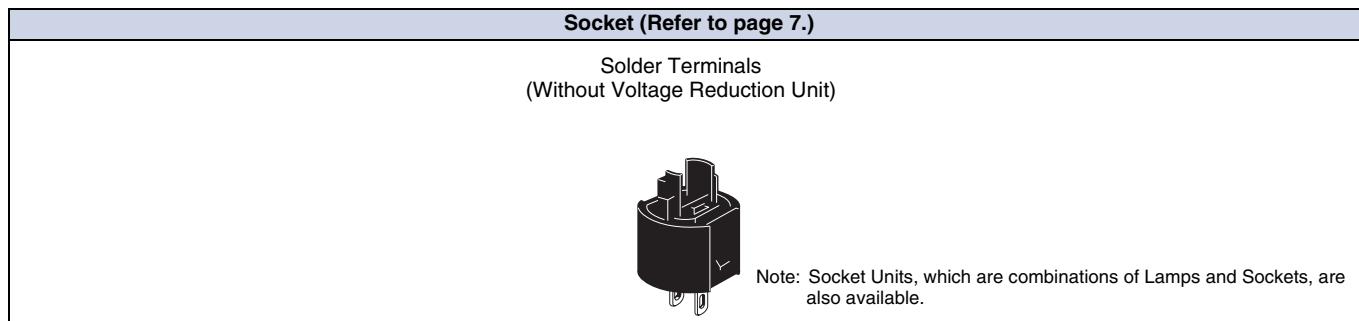
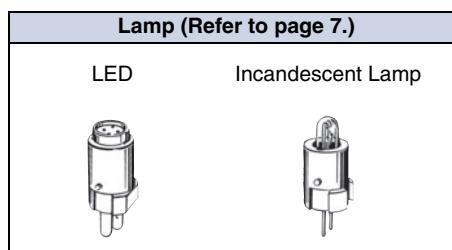
**Ordering Individually** ..... Displays, Cases, Lamps, and Sockets can be ordered separately. Combinations that are not available as sets can be created using individual parts. Also, store the parts as spares for maintenance and repairs.



Note: Use IP40 Displays in combination with IP40 Cases and use IP65 Displays in combination with IP65 Cases.  
The Display has a legend plate built in.



### Lighted Models

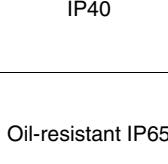


- For colored illumination, order the Display, Case, Lamp, and Socket Unit separately.

## Ordering Information

**Sets**..... Sets that combined a Display and Cases are also available.

### Display Set

Appearance	Classification	Model
	IP40	Rectangular (2-way guard)
		Square (2-way guard)
		Round (projecting model)
	Oil-resistant IP65	Rectangular (2-way guard)
		Square (2-way guard)
		Round (projecting model)

Insert one of the following symbols into the box in the model number.

Symbol	Color	Remarks
R	Red	LED and incandescent lamps
Y	Yellow	
PY	Pure yellow	
A	Blue	
W	White*	
GY	Green	
G	Green	Incandescent only

\* Use this pushbutton color if the illumination color of the LED is white or pure white.

### Socket Unit Sets with Incandescent Lamps

Appearance	Classification	Model
	Solder terminals	M16-5
		M16-12
		M16-24

### Socket Unit Sets with LEDs

Appearance	Classification	Model
	Solder terminals	M16-1-2

### Socket Unit Sets with Voltage-reduction Lighting (Solder Terminals)

Appearance	Classification	Model
	100/110 VAC/VDC	M16-1-T1

Note: The LED has 24-VAC/VDC circuit built in.

### Socket Unit Sets with Screw-less Clamp Connectors

Appearance	Classification	Model
	Display	No voltage-reduction lighting
		M16-1-2-S
		Voltage-reduction lighting (See note.)
	100/110 VAC/VDC	M16-1-T1-S
	200/220 VAC/VDC	M16-1-T2-S

Note: 1. The LED built into the 100-V model is 24 VAC/VDC.  
2. The LED built into the 200-V model is high-intensity 24 VAC/VDC.

Insert symbols into the boxes with circled numbers.

1

Symbol	Color
R	Red
Y	Yellow
A	Blue
W	White
G	Green

2

Symbol	Type	Operating voltage
5D	LED	5 VDC
12D		12 VAC/VDC
24D		24 VAC/VDC

## Ordering Information

**Ordering Individually** ..... Displays, Cases, Lamps, and Sockets can be ordered separately. Combinations that are not available as sets can be created using individual parts. Also, store the parts as spares for maintenance and repairs.

### Display

#### For LED-lighted Models

Sealing	IP40			IP65 oil-resistant		
	Rectangular	Square	Round	Rectangular	Square	Round
Appearance						
Color of Display						
Red	A16L-JR	A16L-AR	A16L-TR	A165L-JR	A165L-AR	A165L-TR
Yellow	A16L-JY	A16L-AY	A16L-TY	A165L-JY	A165L-AY	A165L-TY
Pure yellow	A16L-JPY	A16L-APY	A16L-TPY	A165L-JPY	A165L-APY	A165L-TPY
Green	A16L-JGY	A16L-AGY	A16L-TGY	A165L-JGY	A165L-AGY	A165L-TGY
White	A16L-JW	A16L-AW	A16L-TW	A165L-JW	A165L-AW	A165L-TW
Blue	A16L-JA	A16L-AA	A16L-TA	A165L-JA	A165L-AA	A165L-TA

**Incandescent Lamps (With the exception of green, the Units are the same as for LEDs.)**

Sealing	IP40			IP65 oil-resistant		
	Rectangular	Square	Round	Rectangular	Square	Round
Appearance						
Color of Display						
Red	A16L-JR	A16L-AR	A16L-TR	A165L-JR	A165L-AR	A165L-TR
Yellow	A16L-JY	A16L-AY	A16L-TY	A165L-JY	A165L-AY	A165L-TY
Pure yellow	A16L-JPY	A16L-APY	A16L-TPY	A165L-JPY	A165L-APY	A165L-TPY
Green	A16L-JG	A16L-AG	A16L-TG	A165L-JG	A165L-AG	A165L-TG
White	A16L-JW	A16L-AW	A16L-TW	A165L-JW	A165L-AW	A165L-TW
Blue	A16L-JA	A16L-AA	A16L-TA	A165L-JA	A165L-AA	A165L-TA

Ordering set combinations: Refer to page 3.

■ Accessories, replacements, and tools: Refer to the A16.

■ Ratings and characteristics: Refer to the A16.

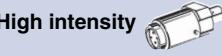
■ Dimensions: Refer to pages 9 to 10.

## Ordering Information

**Ordering Individually** ..... Displays, Cases, Lamps, and Sockets can be ordered separately. Combinations that are not available as sets can be created using individual parts. Also, store the parts as spares for maintenance and repairs.

### Lamp

#### LED

Color	High intensity 		
	5 VDC	12 VAC/VDC	24 VAC/VDC
Red	<b>A16-5DSR</b>	<b>A16-12DSR</b>	<b>A16-24DSR</b>
Yellow	<b>A16-5DSY</b>	<b>A16-12DSY</b>	<b>A16-24DSY</b>
Green	<b>A16-5DSG</b>	<b>A16-12DSG</b>	<b>A16-24DSG</b>
White *	<b>A16-5DSW</b>	<b>A16-12DSW</b>	<b>A16-24DSW</b>
Blue	<b>A16-5DA</b>	<b>A16-12DA</b>	<b>A16-24DA</b>
Pure white	<b>A16-5DPW</b>	<b>A16-12DPW</b>	<b>A16-24DPW</b>

\* Use the white LED when the required illumination color is white or pure yellow.

### Incandescent Lamp

Appearance	Operating voltage	Model
	5 VAC/VDC	<b>A16-5</b>
	12 VAC/VDC	<b>A16-12</b>
	24 VAC/VDC	<b>A16-24</b>

### Case

Appearance	Classification		Model number
	IP40	Rectangular	<b>A16-CJM</b>
		Square	<b>A16-CAM</b>
		Round	<b>A16-CTM</b>
	IP65 oil-resistant	Rectangular	<b>A165-CJM</b>
		Square	<b>A165-CAM</b>
		Round	<b>A165-CTM</b>

### Socket

Appearance	Classification		Model number
	Solder terminals		<b>M16-0</b>
	PCB terminals		<b>M16-0P</b>
	Screw-Less Clamp		<b>M16-S</b>
	Solder terminals	100 V	<b>M16-T1</b>
		100 V	<b>M16-T1-S</b>
		200 V	<b>M16-T2-S</b>

Ordering set combinations: Refer to page 3.

■ Accessories, replacements, and tools: Refer to the A16.

■ Ratings and characteristics: Refer to the A16.

■ Dimensions: Refer to pages 9 to 10.

## Specifications

### Approved Standard Ratings

#### UL, cUL (File No. E76675)

LED: 24 VDC max.

Incandescent lamp: 24 VDC/VAC max.

Note: Certification has been obtained for the Socket Unit.

For detailed information on individual products that have received certification, consult your supplier.

### Ratings

Ambient operating temperature	–10°C to 55°C (with no icing or condensation)
Ambient operating humidity	35% to 85%RH
Ambient storage temperature	–25°C to 65°C (with no icing or condensation)

### Super-bright LED

Rated voltage	Rated current	Operating voltage	Built-in limiting resistance
5 VDC	8 mA	5 VDC ±5%	Red, yellow, white: 300 Ω Green, blue, pure white: 160 Ω
12 VAC/VDC		12 VAC/VDC ±5%	Red, yellow, white: 1 kΩ Green, blue, pure white: 910 Ω
24 VAC/VDC		24 VAC/VDC ±5%	2.4 kΩ

### Incandescent Lamp

Rated voltage	Rated current	Operating voltage
6 VAC/VDC	60 mA	5 VAC/VDC
14 VAC/VDC	40 mA	12 VAC/VDC
28 VAC/VDC	24 mA	24 VAC/VDC

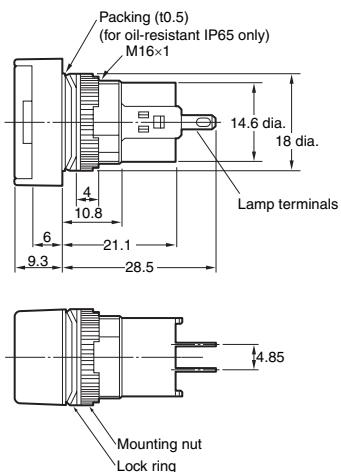
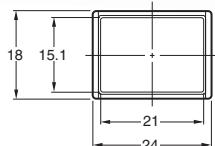
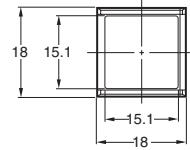
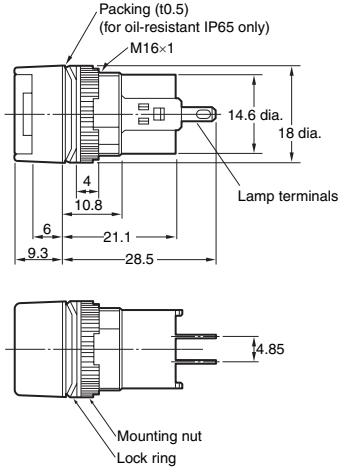
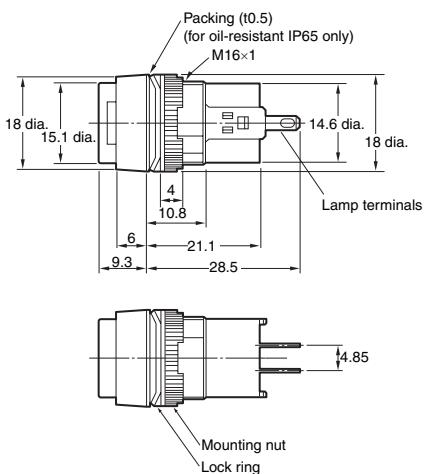
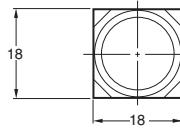
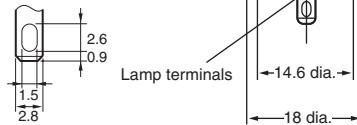
### Characteristics

#### Screw-less Clamp

Item	Type	Screw-less Clamp			
Recommended wire size	0.5 mm <sup>2</sup> twisted wire or 0.8 mm-dia. solid wire				
Usable wires and tensile strength	Twisted wire	0.3 mm <sup>2</sup>	0.5 mm <sup>2</sup>	0.75 mm <sup>2</sup>	1.25 mm <sup>2</sup>
	Solid wire	0.5 mm dia.	0.8 mm dia.	1.0 mm dia.	---
Length of exposed wire		10 ±1 mm			
Compliant standards		JIS C 2811 Terminal Blocks for Industrial Use			

**Dimensions** (Refer to the A16 for details of panel cutout dimensions.)

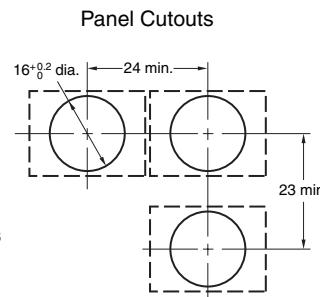
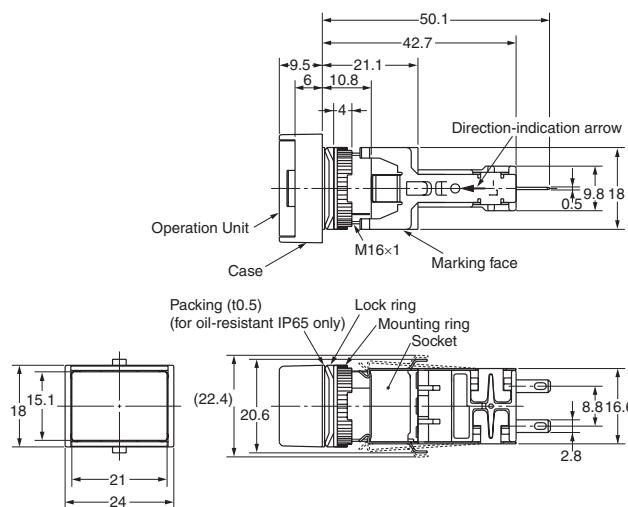
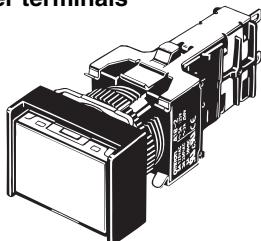
(Unit: mm)

**Rectangular****M16□-J****Solder terminals****Square****M16□-A****Solder terminals****Round****M16□-T****Solder terminals****Terminal Hole Dimensions**

## Dimensions

## Rectangular

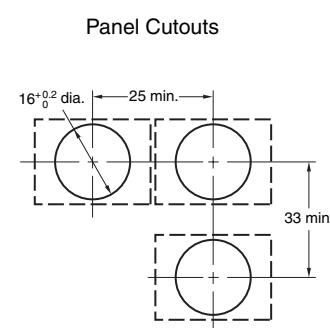
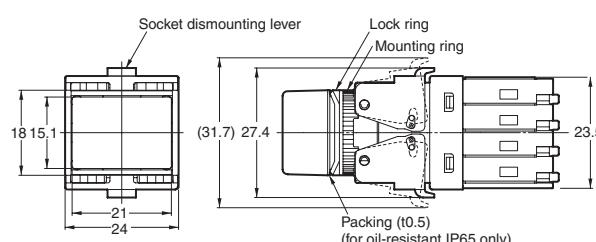
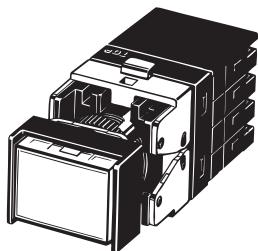
M16□-J□-T1

Voltage-reduction lighting,  
solder terminals

## Rectangular

M16□-J□-S

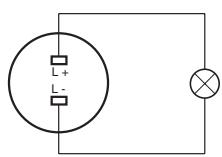
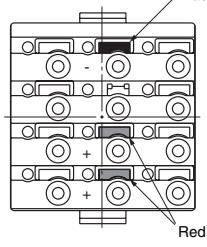
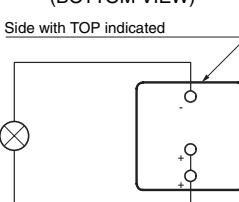
Screw-less Clamp



## Dimensions

(All units are in millimeters unless otherwise indicated.)

### Terminal Arrangement

Solder Terminals	Screw-less Clamp	Voltage-reduction Lighting
<p>(BOTTOM VIEW)</p>  <p>The L+ is not shown on the Socket Unit.</p>	<p>(BOTTOM VIEW)</p> 	<p>(BOTTOM VIEW)</p>  <p>Models with voltage-reduction lighting have a circuit to reduce voltage built in.</p>

### Accessories, Replacements, and Tools

The accessories, replacements, and tools are also used with the A16 Pushbutton Switch. Refer to the A16 datasheet.

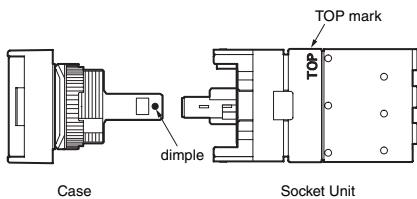
### Safety Precautions

Refer to **Safety Precautions for All Pushbutton Switches/Indicators** and **Safety Precautions for the A16**.

#### Precautions for Correct Use

##### Mounting

- When mounting the Case onto the Socket Unit, ensure that the orientation is correct. Perform mounting with the dimple on the Case and the TOP mark on the Socket Unit facing in the same direction.



##### Wiring

- When using stranded wire, gather the ends of the strands together before wiring.
- When wiring, insert the wire until it comes into contact with something. After wiring is completed, pull on the wires to confirm that they are connected securely.
- After wiring, ensure that continuous pressure is not applied to the terminals.
- Refer to internal connections diagrams and confirm the terminal numbers before performing wiring.

#### Screw-less Clamps

##### Mounting Procedure

- Strip a length of 10 mm off the end of the wire (allowable range:  $10\pm1$  mm).
- Bunch wire strands together and straighten them.
- Insert the wire into the insertion hole while pressing the release button at the side of the hole. (Using a precision screwdriver is recommended.)
- Let go of the release button to lock the wire into place.
- After locking, pull on the wire gently to confirm that it is securely locked.

##### Removing Procedure

- Remove wires by pulling them while pressing the release button.

Note: When reusing wires that have already been locked, cut off the end of the wire and strip the wire again before using.

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