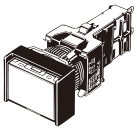
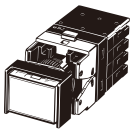
M16

Cylindrical 16-dia. Indicator

■ Same basic design as the A16 Pushbutton Switch.

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.

M 1 6 (1) 5 - (2) T (3) R - (4) 24D - (5) S

(5) Terminal Type

Symbol	Terminal type
No symbol	Solder terminals
S	Screw-less Clamp

(1) Degree of Protection

Symbol	Protection
No symbol	IP40
5	IP65 oil-resistant

(2) Shape of Display

Symbol	Shape
J	Rectangular
A	Square
T	Round

(3) Color of Display

Symbol	Color
R	Red
G	Green
Y	Yellow
PY	Pure yellow
W	White
PW	Pure white
A	Blue

(4) Light Source

Symbol	Type	Operating voltage	Rated voltage
5	Incandescent lamp	5 VAC/VDC	6 VAC/VDC
12		12 VAC/VDC	14 VAC/VDC
24		24 VAC/VDC	28 VAC/VDC
5D	LED	5 ±5% VDC	5 VDC
12D		12 ±5% VAC/VDC	12 VAC/VDC
24D		24 ±5% VAC/VDC	24 VAC/VDC

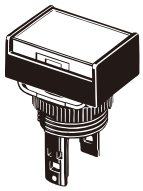
Voltage Reduction Unit (24-V Built-in LED)

Symbol	Type	Operating voltage	Rated voltage
T1	LED	100/110 VAC/VDC	110 VAC/VDC
T2		200/220 VAC/VDC	220 VAC/VDC

- Solder terminals are available only with 100-V models.
- Screw-less clamp connectors are used for 200-V models.

Sets ..... Select an Operation Unit Set (Operation Unit and Case) and a Socket Unit Set (Lamp and Socket Unit).

Display Unit

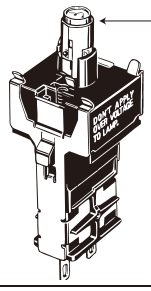


Rectangular, Square, Round

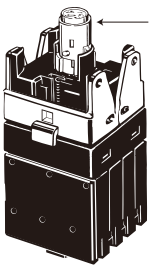
Lighted Models

Socket Unit Set with Voltage-reduction Lighting

Voltage-reduction lighting



Socket Unit Set with Screw-less Clamp Connector



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 *
Square (M16-A) 	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**	R: red Y: yellow G: green A: blue W: white PY: pure yellow
		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-J) 	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**	R: red Y: yellow G: green A: blue W: white PY: pure yellow
		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**	R: red Y: yellow G: green A: blue W: white PY: pure yellow
		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.

Specifications

Approved Standards

UL, cUL

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 : 160Ω
12 VAC/VDC		12 VAC/VDC ±5%	Red, yellow, white : 1 kΩ Green, blue, pure white : 910Ω
24 VACVDC		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^2 twisted wire or 0.8 mm-dia. solid wire			
Usable wires and tensile strength	**Twisted wire**	0.3 mm^2	0.5 mm^2	0.75 mm^2	1.25 mm^2
	Solid wire	0.5 mm dia.	0.8 mm dia.	1.0 mm dia.	---
	Tensile strength	10 N	20 N	30 N	40 N
Length of exposed wire		10 ±1 mm			
Compliant standards		JIS C 2811 Terminal Blocks for Industrial Use			

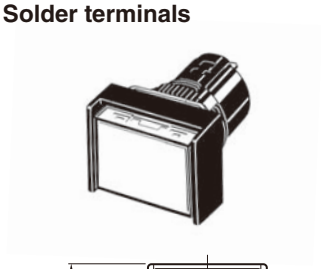
Dimensions (Refer to the A16 for details of panel cutout dimensions.)

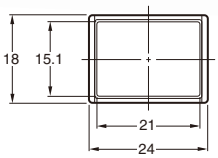
(Unit: mm)

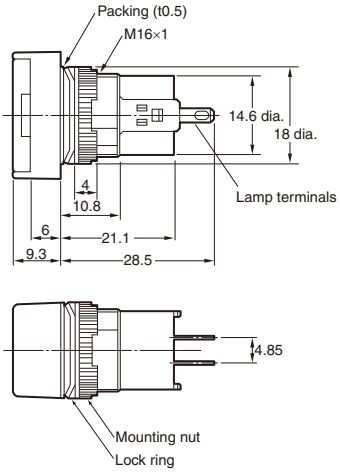
Rectangular

M16-J

Solder terminals



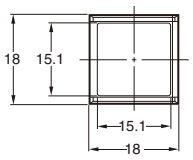


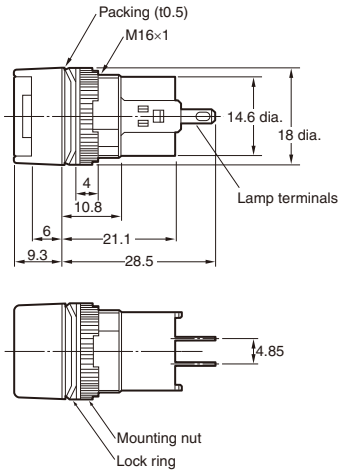


Square

M16-A

Solder terminals

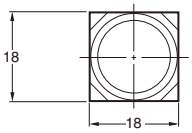


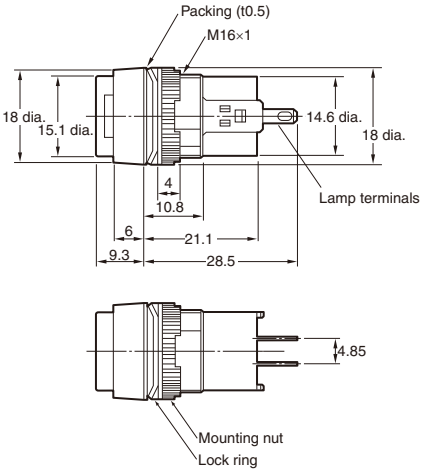


Round

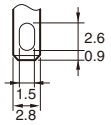
M16-T

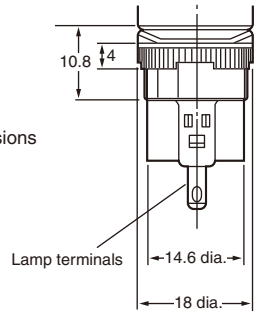
Solder terminals





Terminal Hole Dimensions





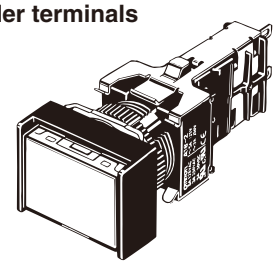
Dimensions

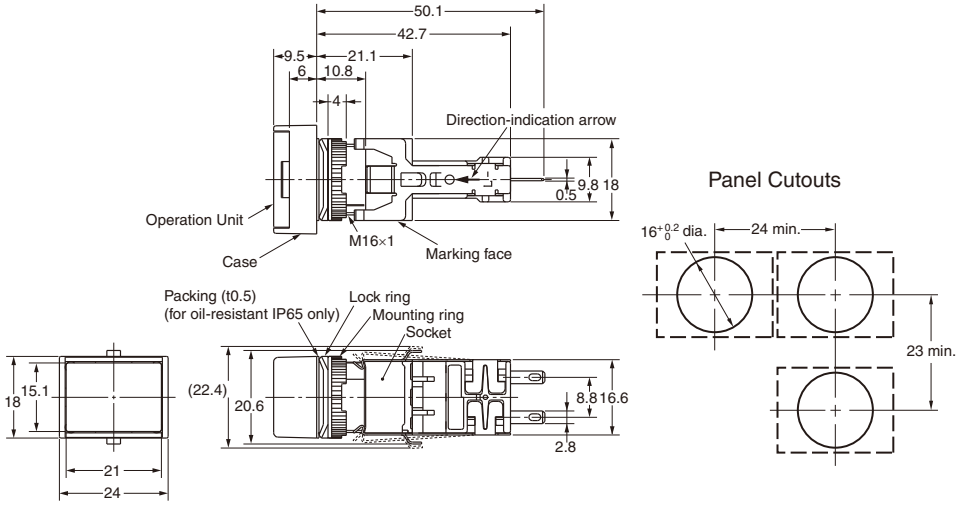
(Unit: mm)

Rectangular

M16□-J□-T1

Voltage-reduction lighting, solder terminals

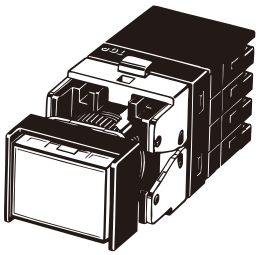


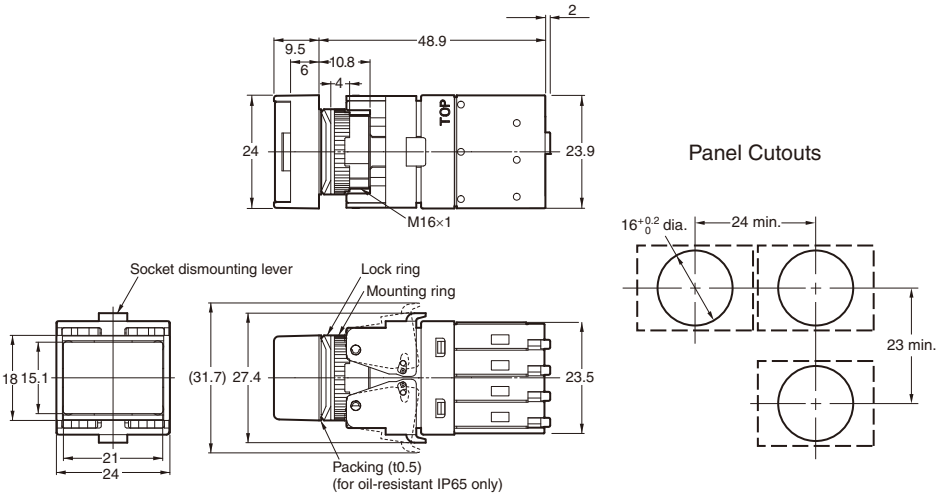


Rectangular

M16□-J□-5

Screw-less Clamp

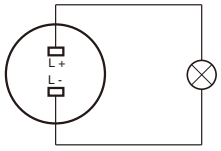
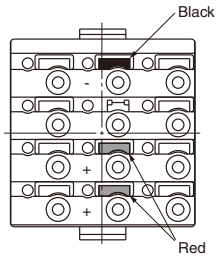
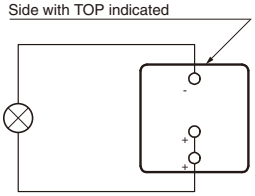
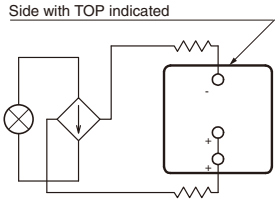




Dimensions

(All units are in millimeters unless otherwise indicated.)

Terminal Arrangement

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

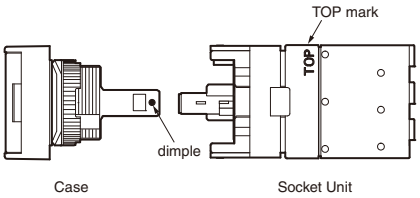
Accessories, Replacements, and Tools

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

Safety Precautions

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.

Application

Screw-less Clamps

Mounting Procedure

1. Strip a length of 10 mm off the end of the wire (allowable range: 10±1 mm).
2. Bunch wire strands together and straighten them.
3. Insert the wire into the insertion hole while pressing the release button at the side of the hole. (Using a precision screwdriver is recommended.)
4. Let go of the release button to lock the wire into place.
5. After locking, pull on the wire gently to confirm that it is securely locked.

Removing Procedure

1. 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.