

A6 Series – Miniature Switches and Pilot Devices: 16mm

Key features:

- 16mm (5/8") mounting hole
- LED illumination
- Compact design saves space
- Momentary, Maintained, Selectors, and E-Stops
- Gold-clad Silver contacts for reliable low level switching
- Snap action contacts
- IP40 (dustproof) or IP65 (oiltight) versions



UL Recognized
File No. E55996



CSA Certified
File No. LR21451



| | | | | | |
|------------------------------|--|--|--|--------------------|--------------------|
| Specifications | Degree of Protection | IP40: Dustproof IP65 Watertight/Oiltight | | | |
| | Contact Configuration | SPDT, DPDT | | | |
| | Maximum Voltage | 250V AC/DC | | | |
| | Thermal Current | 3A | | | |
| | Minimum Applicable Load | 5V AC/DC, 1mA | | | |
| | Contact Material | Gold-clad silver | | | |
| | Terminal Style | .110" Solder/ Quick Connect | | | |
| | Operating Temperature | -25° to +55°C (no freezing) | | | |
| | Operating Humidity | 45 to 85% RH | | | |
| | Contact Resistance | 50mΩ maximum (initial value) | | | |
| | Insulation Resistance | 100MΩ minimum (500V DC megger) | | | |
| | Vibration Resistance | 10 to 55Hz, amplitude 1.5mm p-p | | | |
| | Shock Resistance | Damage limits: 500m/sec ² (approx. 50G) Operating extremes: 200m/sec ² (approx. 20G) | | | |
| Electrical Life | 100,000 operations minimum (at full rated load) | | | | |
| Mechanical Life | Maintained: 100,000 operations minimum Momentary: 1,000,000 operations minimum Selector/Keylock: 250,000 operations minimum | | | | |
| Dielectric Strength | Switch Unit: 2,000V AC, 1 min. between live/dead part and terminals of different poles; 1,000V AC, 1 minute between terminals of the same pole; 1,500V AC, 1 minute between contact and lamp terminals. Illumination Unit: 2,000V AC, 1 min. between live part/ground | | | | |
| Soldering Temperature | 20W/5 seconds or 260°C/3 seconds | | | | |
| Contact Ratings | Operating Voltage | 24V | 120V | 240V | |
| | AC (50/60Hz) | Resistive | — | 1.0A | 0.5A |
| | | Inductive | — | 0.7A | 0.5A |
| | DC | Resistive | 1.0A | 0.2A | — |
| Inductive | | 0.7A | 0.1A | — | |
| LED Lamp Ratings | Rated Voltage/Current | 5V DC ±5% | 6V AC/DC (±10%) | 12V AC/DC (±10%) | 24V AC/DC (±10%) |
| | | 8mA | AC: A, R, W, Y: 8mA G, S: 7mA DC: A, R, W, Y: 6mA G, S: 5mA | AC: 9mA DC: 8mA | AC: 9mA DC: 8mA |



1. AC Inductive Load, PF = 0.6 – 0.7; DC Inductive Load, L/R = 7ms.
2. LED lamp contains a built-in current limiting resistor and a protection diode.
3. LED's don't "burn out." Luminance is reduced to 50% of initial intensity after being lit for 50,000 hours continuously.

Switches & Pilot Lights

Display Lights

Relays & Sockets

Timers

Terminal Blocks

Circuit Breakers

AB6 Non-Illuminated Pushbuttons (Assembled)

Non-Illuminated Pushbuttons

| Style | Contact | Part Number | | | |
|--|--------------|------------------------|----------------------------|------------------------|----------------------------|
| | | Momentary | | Maintained (Latching) | |
| | | Dustproof (IP40) | Oiltight (IP65) | Dustproof (IP40) | Oiltight (IP65) |
| Round 18mm  | SPDT DPDT | AB6M-M1-⓪ AB6M-M2-⓪ | AB6M-M1P-⓪ AB6M-M2P-⓪ | AB6M-A1-⓪ AB6M-A2-⓪ | AB6M-A1P-⓪ AB6M-A2P-⓪ |
| Square 18mm  | SPDT DPDT | AB6Q-M1-⓪ AB6Q-M2-⓪ | AB6Q-M1P-⓪ AB6Q-M2P-⓪ | AB6Q-A1-⓪ AB6Q-A2-⓪ | AB6Q-A1P-⓪ AB6Q-A2P-⓪ |
| Rectangular 18mm x 24mm  | SPDT DPDT | AB6H-M1-⓪ AB6H-M2-⓪ | AB6H-M1P-⓪ AB6H-M2P-⓪ | AB6H-A1-⓪ AB6H-A2-⓪ | AB6H-A1P-⓪ AB6H-A2P-⓪ |
| Round 23.5mm  | SPDT DPDT | - | AB6M-M1P-M⓪ AB6M-M2P-M⓪ | - | AB6M-A1P-M⓪ AB6M-A2P-M⓪ |
| Square 23.5mm  | SPDT DPDT | - | AB6Q-M1P-Q⓪ AB6Q-M2P-Q⓪ | - | AB6Q-A1P-Q⓪ AB6Q-A2P-Q⓪ |
| Rectangular 17.5 X 23.5mm  | SPDT DPDT | - | AB6Q-M1P-H⓪ AB6Q-M2P-H⓪ | - | AB6Q-A1P-H⓪ AB6Q-A2P-H⓪ |


⓪ Button Color Code

| Color | Code |
|--------|------|
| Black | B |
| Green | G |
| Red | R |
| Blue | S |
| White | W |
| Yellow | Y |



1. In place of ⓪, specify Button Color Code from the table at right.
2. To order as sub-assembled, see page 459.
3. For accessories, see page 466.
4. For dimensions, see page 468.

AB6-V Pushlock Turn Reset

| Shape | Operation | Contact | Part Number | | Remarks |
|--|---------------------|--------------|------------------------|--------------------------|---|
| | | | Dustproof (IP40) | Oiltight (IP65) | |
| 23.5mm Round Mushroom  | Pushlock Turn Reset | SPDT DPDT | AB6M-V1-R AB6M-V2-R | AB6M-V1P-R AB6M-V2P-R | 1. Button available in red only. 2. Replacement button: order AB6M-V-R |

Buzzer

| Style | Shape | Voltage | Part Number |
|---|--------------|---------|-------------|
|  | Round (18mm) | 12V DC | UZ6-11 |
| | | 24V DC | UZ6-12 |

Buzzer Ratings

| | |
|-----------------------|---|
| Frequency | 2 kHz ± 500 Hz |
| Amplitude | 80db @ 0.1m (at rated voltage) |
| Operating Voltage | 6V AC/DC or 12 - 24V AC/DC ± 10% |
| Adjustable Cycle | 55 to 600 cycles per minute |
| Current Draw | DC: 7mA, AC: 20mA |
| Life | 1000 hrs. minimum |
| Insulation Voltage | 60V AC/DC |
| Operating Temperature | -20 to 55 C (no freezing), 45 to 85% rh |

Switches & Pilot Lights

Display Lights

Relays & Sockets

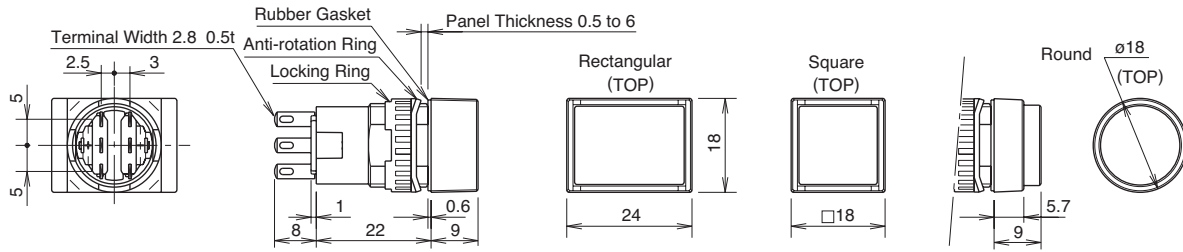
Timers

Terminal Blocks

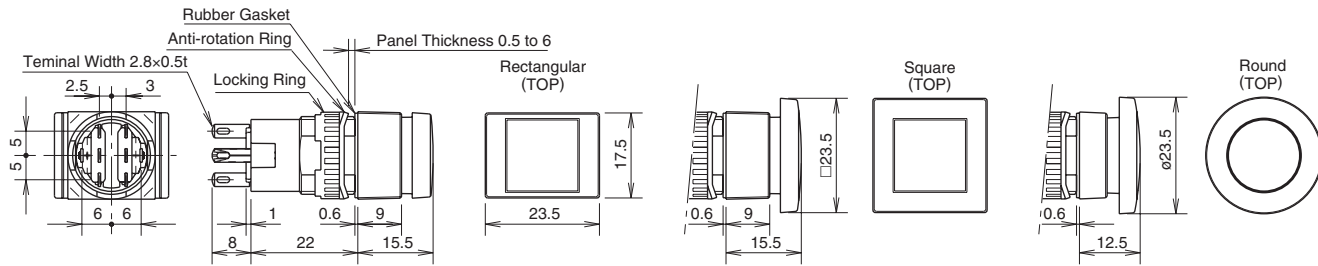
Circuit Breakers

Dimensions (mm)

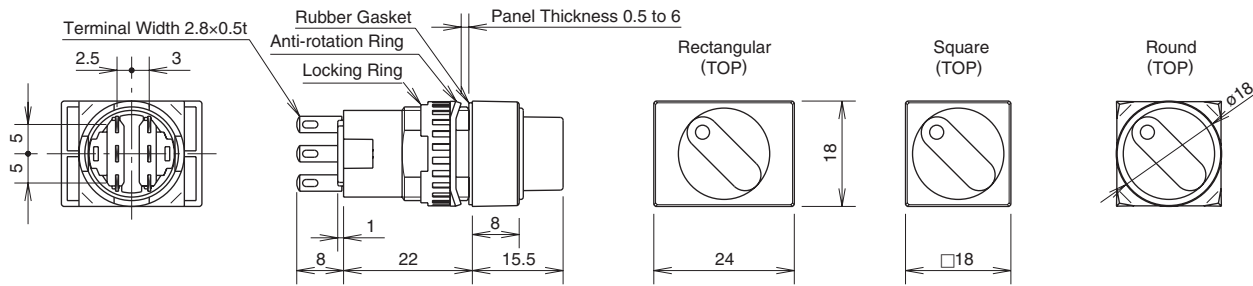
Pushbuttons, Ø 5/8" (16mm)



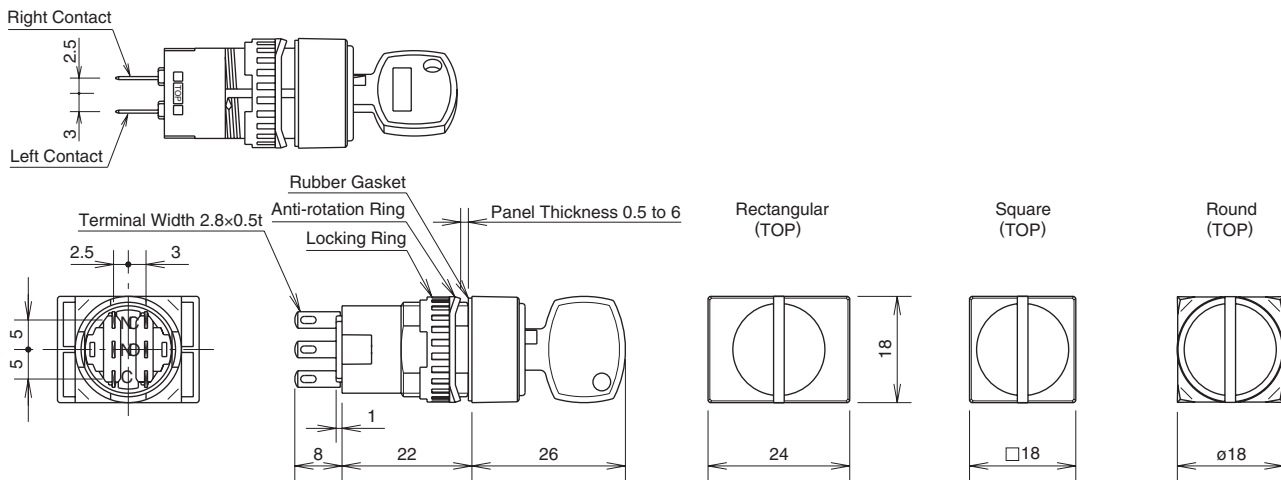
Oversize Lens



Selector Switches, Ø 5/8" (16mm)



Key Selector Switches, Ø 5/8" (16mm)



Switches & Pilot Lights

Display Lights

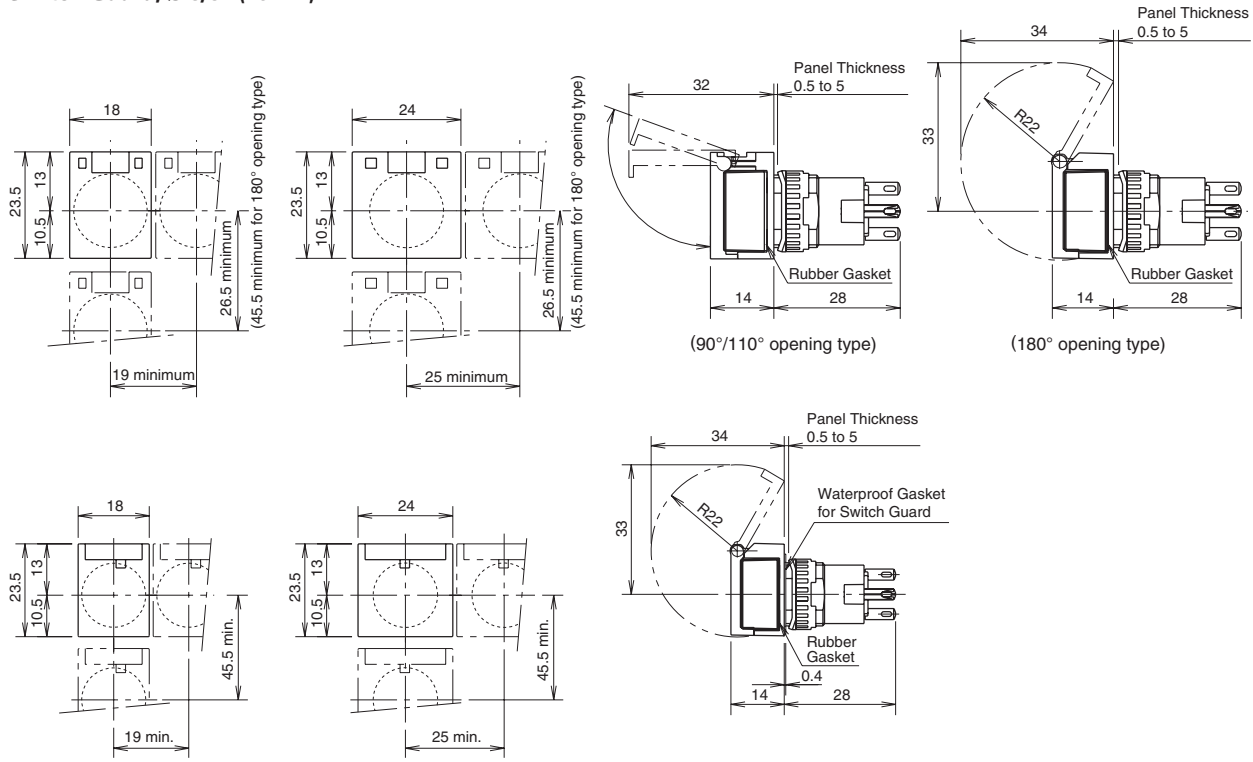
Relays & Sockets

Timers

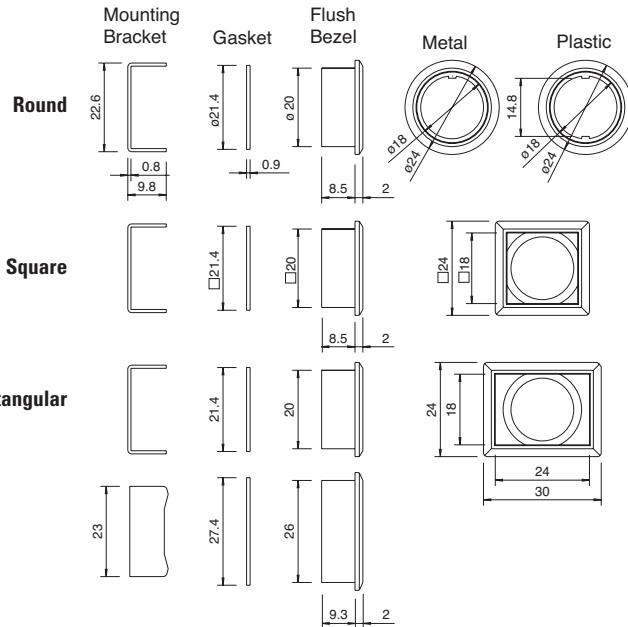
Terminal Blocks

Circuit Breakers

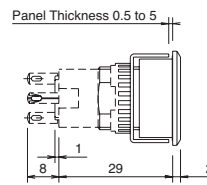
Switch Guard, Ø 5/8" (16mm)



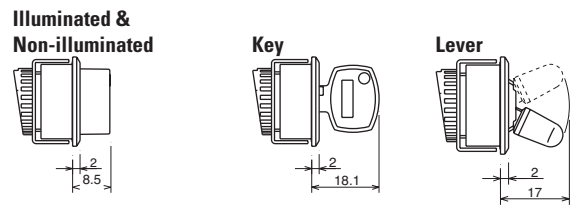
Flush Bezel



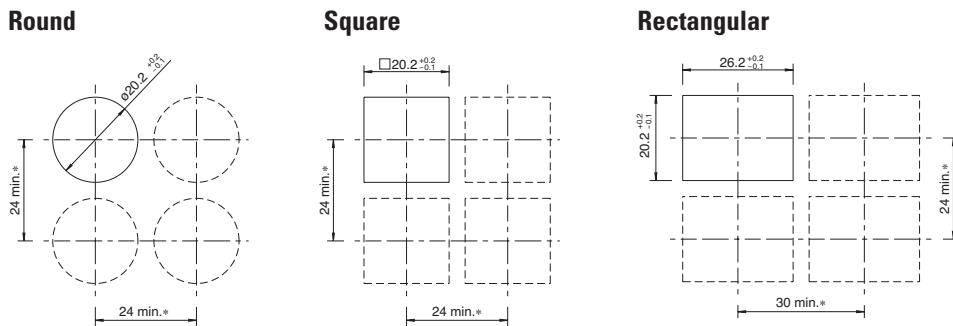
Flush Bezel with Switch



Selector Switches



Flush Bezel Mounting Hole Layout



Switches & Pilot Lights

Display Lights

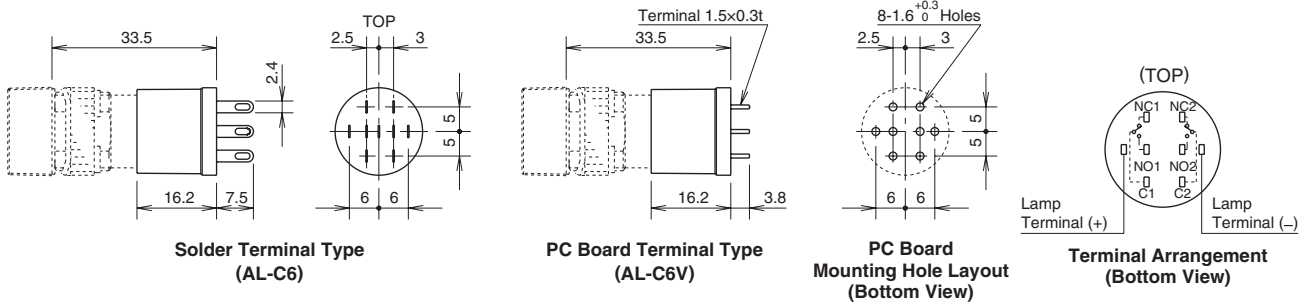
Relays & Sockets

Timers

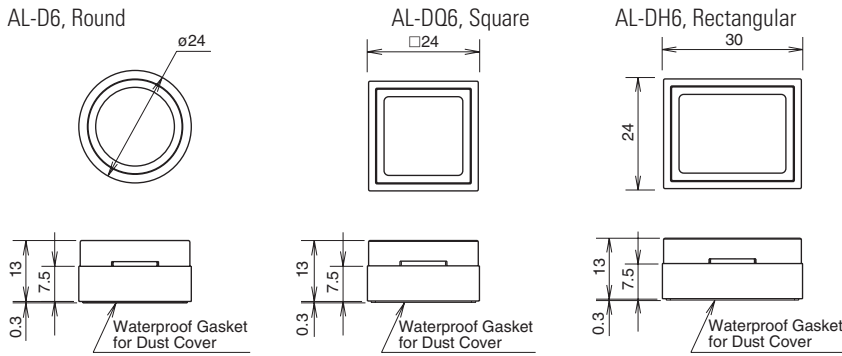
Terminal Blocks

Circuit Breakers

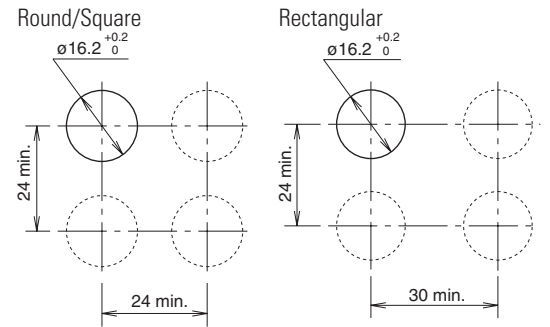
Terminal Sockets



Dust Covers



Panel Cut-Outs For Units w/Dust Cover



Marking Plates

Pushbuttons with Standard Size Lens

| Style | Round—AL6M-W | Square—AL6Q-W | Rectangular—AL6H-W |
|------------------|--------------------|---------------|--|
| Dimensions | | | |
| | $\phi 5/8"$ (16mm) | | |
| Outside (OD) | (13.8mm) | (13.8mm) | (OD ¹ x OD ²) 13.8 x 19.8mm |
| Marking Area (a) | (12mm) | (12mm) | (a ¹ x a ²) 12 x 18mm |

Pushbuttons with Oversize Lens

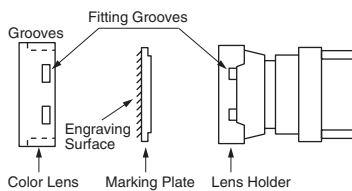
| Style | Round—AL6M-MW | Square/Rectangular—AL6Q-QW |
|------------------|------------------------|----------------------------|
| Dimensions | | |
| Outside (OD) | $\phi 0.491"$ (12.6mm) | 0.491" (12.6mm) |
| Marking Area (a) | $\phi 0.429"$ (11mm) | 0.429" (11mm) |

Engraving must be made on the engraving area within 0.02" (0.5mm) deep.

Replacing & and Marking Plate

Removal

Remove the lens holder assembly (lens, marking plate and holder) from the operator by holding the color lens recesses with the lens removal tool (Part No.MT-101) and pulling out. Remove marking plate by pushing the color lens from the rear to disengage the latches. Marking plate must be engraved on the side as shown in the figure on the right. $\phi 5/8"$ (16mm)



Installation

For illuminated pushbuttons:

1. Insert marking plate inside lens in correct direction
2. Press color lens on to lens holder to engage latches.
3. Insert lens holder into housing in correct direction.

Do not loosen spring on illuminated pushbutton units (except on pilot light units). The marking plate must be engraved on the front side as shown above.