Series JW
High Inrush 10 & 16 Amp Rockers

General Specifications

Electrical Capacity (Resistive Load)
Power Level:
- 10A @ 125/250V AC for JWM & JWMW models;
- 10A @ 30V DC for JWMW;
- 16A @ 125/250V AC for JWL & JWLW models;
- 5A @ 72V DC for telecommunication applications.

Other Ratings
- Contact Resistance: 10 milliohms maximum for JWM & JWMW; 20 milliohms maximum for JWL & JWLW.
- Insulation Resistance: 1,000 megohms minimum @ 500V DC.
- Dielectric Strength: 2,000V AC minimum between contacts for 1 minute minimum;
  4,000V AC minimum between contacts & case for 1 minute minimum.
- Mechanical Life: 25,000 operations minimum.
- Electrical Life: 25,000 operations minimum.
- Nominal Operating Force:
  - JWM & JWMW Single Pole 3.92N & Double Pole 7.84N;
  - JWL Single Pole 5.00N & Double Pole 10.00N;
  - JWLW Double Pole 10.00N.
- Angle of Throw: 26°

Materials & Finishes
- Rocker: Polyphenylene ether (UL94V-0).
- Housing/Frame & Barrier: Polyamide (UL94V-0).
- Interior Seal for JWM & JWL: Polyphenylene sulfide (UL94V-0).
- Case/Base: Melamine (UL94V-0).
- Contacts: JWM & JWMW: Silver alloy with silver plating.
- JWL & JWLW: Silver alloy plus copper with silver plating.
- Terminals: Brass with silver plating.

Environmental Data
- Operating Temperature Range: -25°C through +70°C (-13°F through +158°F) for JWM & JWL;
  -25°C through +85°C (-13°F through +185°F) for panel seal JWMW & JWLW models.
- Humidity: 90 ~ 95% humidity for 96 hours @ 40°C (104°F).
- Vibration: 10 ~ 55Hz with peak-to-peak amplitude of 1.5mm traversing the frequency range & returning in 1 minute;
  3 right angled directions for 2 hours.
- Shock: 50G (490m/s²) acceleration (tested in 6 right angled directions, with 5 shocks in each direction).
- Sealing: IP67 of IEC60529 standard for panel seal JWMW & JWLW models;
  dust resistant inner seal for others.

Installation

Standards & Certifications
- Flammability Standards: UL94V-0 for rocker, housing, seal & case/base of JWL, JWM, JWMW & JWLW models.
- TV Ratings for UL & CSA:
  - JWM (TV-5) Overload Test @ 120V AC for 50 operations:
    Steady State Current (rms) 7.5A; Minimum Inrush Current (peak) 111A.
  - JWM (TV-5) Endurance Test @ 120V AC for 25,000 operations:
    Steady State Current (rms) 5A; Minimum Inrush Current (peak) 78A.
  - JWL (TV-8) Overload Test @ 120V AC for 50 operations:
    Steady State Current (rms) 12A; Minimum Inrush Current (peak) 163A.
  - JWL (TV-8) Endurance Test @ 120V AC for 25,000 operations:
    Steady State Current (rms) 8A; Minimum Inrush Current (peak) 117A.
- UL: File No. E44145
  - JWM & JWMW models recognized at 10A @ 250V AC.
  - JWMW recognized at 10A @ 30V DC.
  - JWL & JWLW models recognized at 16A @ 250V AC; JWL at 5A @ 72V DC.
- Models below recognized only when ordered with marking on switch.
  - JWMW: add “/U” to end of part number to order UL mark on switch;
    add “/cUL” to end of part number to order cULus mark on switch.
  - JWL: add “/U-DC” to end of part number to request UL rating on DC rated switch.
- CSA: File No. 023535_0_000
  - JWM & JWMW models certified at 10A @ 250V AC;
  - JWL models certified at 16A @ 250V AC.
- VDE: License No. 115674
  - JWM models approved at steady state 5A, inrush 80A, resistive 10A, & motor load 6A all at 250V AC;
  - JWL models approved at steady state inrush 128A, resistive 16A, & motor load 8A all at 250V AC.
- Note: JWM & JWL Double Pole, Single Throw models approved only with the international ON-OFF symbols on the actuator.

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B40
Distinctive Characteristics

Industry’s first molded rocker with TV rating. Designed to handle large inrush current, with high electrical capacity of 10 and 16 Amps. JWM models certified for TV-5 rating and JWL models for TV-8 rating.

JWMW and JWLW panel seal versions meet IP67 of IEC60529 Standards (similar to NEMA 4 and 6).

Prominent external insulating barriers increase insulation resistance and dielectric strength.

Uniquely constructed to break light contact welds.

Increased electrical life with specially designed plate to minimize contact bounce.

Constructed for dust resistance with interior cover between actuator and contact area.

Terminals are molded in and epoxy sealed to lock out flux, dust, and other contaminants.

Solder lug/quick connect terminals can be used with connector.

Housing and case of heat resistant resin meet UL94V-0 standard.
### TYPICAL SWITCH ORDERING EXAMPLE

<table>
<thead>
<tr>
<th>JW</th>
<th>LW</th>
<th>2</th>
<th>1</th>
<th>R</th>
<th>A</th>
<th>1</th>
<th>A</th>
</tr>
</thead>
</table>

#### Ratings

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Current</th>
<th>Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>Panel Seal</td>
<td>10A</td>
<td>125/250V AC</td>
</tr>
<tr>
<td>MW</td>
<td>Panel Seal</td>
<td>10A</td>
<td>125/250V AC</td>
</tr>
<tr>
<td>L</td>
<td>16A</td>
<td>125/250V AC</td>
<td></td>
</tr>
<tr>
<td>LW</td>
<td>Panel Seal</td>
<td>16A</td>
<td>125/250V AC</td>
</tr>
</tbody>
</table>

#### Barrier Types

- R: No Barrier
- B: With Barrier

**Note:** JWMW & JWLW combine with code R only.

#### Cap Colors

- A: Black
- B: Ivory
- C: Red
- H: Gray

**Note:** JWMW & JWLW available with black or red caps only.

#### Housing Colors

- A: Black
- B: Ivory
- H: Gray

**Note:** JWMW & JWLW available with black only.

#### Poles

1. SPST
2. DPST

#### Incription Orientation

- No Code: No Inscription
- 1: Horizontal
- 2: Vertical

**Note:** These are inscriptions for Single Throw models only.

#### Inscription Orientation

**IMPORTANT:**
Standard markings for JWM & JWL:
- TV Rating, UL, CSA & VDE
- Standard marking for JWLW: cULus

Specific models, ratings & ordering instructions for international approvals are noted on General Specifications page.

#### DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

**JWLW21RA1A**

- Black Rocker Cap with International ON-OFF Symbols in Horizontal Orientation
- Black Housing
- DPST
- ON-NONE-OFF Circuit
- 16A @ 125/250V AC
High Inrush 10 & 16 Amp Rockers

RATINGS

<table>
<thead>
<tr>
<th>Pole</th>
<th>Model</th>
<th>Power Level</th>
<th>Panel Seal Power Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>JWM11</td>
<td>10A @ 125/250V AC</td>
<td>10A @ 125/250V AC</td>
</tr>
<tr>
<td>L</td>
<td>JWL11</td>
<td>16A @ 125/250V AC</td>
<td>16A @ 125/250V AC</td>
</tr>
</tbody>
</table>

POLES & CIRCUITS

<table>
<thead>
<tr>
<th>Pole</th>
<th>Model</th>
<th>Rocker Position</th>
<th>Connected Terminals</th>
<th>Throw &amp; Schematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td>JWM11</td>
<td>On</td>
<td>1-1b</td>
<td>SPST</td>
</tr>
<tr>
<td></td>
<td>JWMW11</td>
<td>None</td>
<td>OPEN</td>
<td></td>
</tr>
<tr>
<td></td>
<td>JWL11</td>
<td>Off</td>
<td>OPEN</td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td>JWM12</td>
<td>On</td>
<td>1-1b</td>
<td>SPDT</td>
</tr>
<tr>
<td></td>
<td>JWMW12</td>
<td>None</td>
<td>1-1a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>JWL12</td>
<td>On</td>
<td>OPEN</td>
<td></td>
</tr>
<tr>
<td>DP</td>
<td>JWM21</td>
<td>On</td>
<td>1-1b</td>
<td>DPST</td>
</tr>
<tr>
<td></td>
<td>JWMW21</td>
<td>None</td>
<td>2-2b</td>
<td></td>
</tr>
<tr>
<td></td>
<td>JWL21</td>
<td>Off</td>
<td>OPEN</td>
<td></td>
</tr>
<tr>
<td></td>
<td>JWLW21</td>
<td>On</td>
<td>1-1a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>JWM22</td>
<td>None</td>
<td>2-2a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>JWMW22</td>
<td>On</td>
<td>OPEN</td>
<td></td>
</tr>
<tr>
<td></td>
<td>JWL22</td>
<td>Off</td>
<td>1-1a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>JWLW22</td>
<td>On</td>
<td>2-2a</td>
<td></td>
</tr>
</tbody>
</table>

Note: Terminal numbers are not actually on the switch. Actuator positions oriented with switch part number facing front.

BARRIER TYPES & COLORS

<table>
<thead>
<tr>
<th>Pole</th>
<th>Model</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>No Barrier</td>
<td>No barrier</td>
</tr>
<tr>
<td></td>
<td>JWM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>JWL</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>With Barrier</td>
<td>Barrier</td>
</tr>
<tr>
<td></td>
<td>JWM</td>
<td>JWL</td>
</tr>
</tbody>
</table>

No-barrier type has a flat flange which is an integral part of the switch.

Barrier type designates that either AT217 (for JWM) or AT218 (for JWL) is factory assembled.

Dimensions for barriers are shown in the Accessories section.

Barrier Colors Available:
- A Black
- B Ivory
- H Gray

Barrier Material: Polyamide Finish: Matte

CAP COLORS

<table>
<thead>
<tr>
<th>Pole</th>
<th>Model</th>
<th>Cap Colors</th>
<th>Rocker cap available separately.</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>No Barrier</td>
<td>A Black</td>
<td>JWMW and JWLW available with black or red caps only.</td>
</tr>
<tr>
<td></td>
<td>JWM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>JWL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>With Barrier</td>
<td>B Ivory</td>
<td></td>
</tr>
<tr>
<td></td>
<td>JWM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>JWL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cap Material: Polyphenylene Oxide Finish: Matte

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Series JW
High Inrush 10 & 16 Amp Rockers

INSCRIPTIONS

No Code  No Inscription

1  Inscription for Horizontal Mounting

2  Inscription for Vertical Mounting

DPST models without inscriptions do not have VDE approval.

The IEC symbols for On-Off are supplied with Single Throw models only.
Orientation of inscription must be selected.
Inscription Colors: Black ink on Ivory or Gray cap. White ink on Black or Red cap.
Contact factory for other inscriptions.

HOUSING

Material: Polyamide
Colors Available: A Black  B Ivory  H Gray
Finish: Matte

JWMW and JWLW panel seal models available with black housing only.

TERMINALS

Solder Lug/Quick Connect .110” (2.8mm)

Solder Lug/Quick Connect .187” (4.75mm)

Panel Thickness Range

Without Barrier (JWM & JWMW):
.039” ~ .157” (1.0mm ~ 4.0mm)

With Barrier (JWM):
.024” ~ .126” (0.6mm ~ 3.2mm)

Panel Thickness Range

Without Barrier (JWL & JWLW):
.039” ~ .157” (1.0mm ~ 4.0mm)

With Barrier (JWL):
.024” ~ .126” (0.6mm ~ 3.2mm)

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TYPICAL SWITCH DIMENSIONS FOR JWM & JWMW

**Single & Double Pole**

**No Barrier • 10 Amp**

**Single & Double Pole**

**With Barrier • 10 Amp**

**Single & Double Pole**

**Panel Seal • No Barrier • 10 Amp**

Single pole double throw models do not have terminals 2a, 2, & 2b; single throw models do not have 1a & 2a.
Series JW

High Inrush 10 & 16 Amp Rockers

TYPICAL SWITCH DIMENSIONS FOR JWL & JWLW

No Barrier • 16 Amp

Single & Double Pole

JWL21RC2A

Single pole double throw models do not have terminals 2a, 2, & 2b; single throw models do not have 1a & 2a.

With Barrier • 16 Amp

Single & Double Pole

JWL118CA-H

Single pole double throw models do not have terminals 2a, 2, & 2b; single throw models do not have 1a & 2a.

Panel Seal • 16 Amp • Inscription

Double Pole Single Throw

JWLW21RA1A
AT4126
Dust Cover for JWL Rocker

When installed, the Dust Cover protects the switch from an environment containing small particles and dust. The switch is operable with the Dust Cover in place.

Materials:
Lid: Clear Polyvinyl Chloride
Base: Black Polyamide

Recommended Temperature Range:
-10° ~ +70°C (+14°F ~ +158°F)
Loses pliability below 0°C (+32°F)

Recommended Panel Thickness:
.031” ~ .134” (0.8mm ~ 3.4mm)

Assembly Instructions:
1. Insert bottom of switch through the base until the tabs lock into place.
2. Snap the switch into the panel.
3. Seat the lid into the grooves of the base.

Notes
1. The dust cover is not for use with JWLW.
2. The dust cover cannot be used with the barrier option.
PRECAUTIONS FOR HANDLING & STORAGE FOR JWMW/LW (PANEL SEAL TYPES)

Operating Environment
- Do not install switch where heavy dust collection occurs. Dust build-up under rocker may affect switch actuation.
- Do not actuate switch if submerged in water or oil.
- Installation is not recommended on horizontal surface in an environment where frequent splashing of water may occur. In such an environment, a minimum 30° angle installation is advisable. If there is a possibility of freezing, install vertically so no moisture will be retained within switch housing.

Panel Mounting
- Before snapping a switch into the panel, align the gasket evenly under bezel of the switch.
- When mounting into a panel, apply equal pressure to sides of bezel and insert parallel to panel.
- After mounting a switch, be sure there are no gaps between switch and panel. Lightly push into panel.
- After installing into panel, do not apply excessive force.
- After panel installation and wiring is completed, do not apply force horizontally or vertically from behind panel.
- Behind the panel, cut area should be squared. If front of panel is painted, do not allow any paint to collect in corners of cutout to prevent level mounting.
- Avoid reinstalling a switch once it has been mounted in a panel. This may cause deterioration of panel sealability.
Series JWS
Internationally Approved Rockers

General Specifications

Electrical Capacity (Resistive Load)

<table>
<thead>
<tr>
<th>Power Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>10A @ 125/250V AC</td>
</tr>
<tr>
<td>6A @ 125/250V AC (UL/CSA)</td>
</tr>
<tr>
<td>5A (3A) @ 125/250V AC (VDE)</td>
</tr>
</tbody>
</table>

Other Ratings

- **Contact Resistance**: 10 milliohms maximum
- **Insulation Resistance**: 500 megohms minimum @ 500V DC
- **Dielectric Strength**: 2,000V AC minimum between contacts for 1 minute minimum;
  4,000V AC minimum between contacts & case for 1 minute minimum
- **Mechanical Life**: 30,000 operations minimum
- **Electrical Life**: 10,000 operations minimum
- **Nominal Operating Force**: Single Pole 3.92N & Double Pole 5.39N
- **Angle of Throw**: 30°

Materials & Finishes

- **Rocker**: Polyamide (UL94V-0)
- **Housing/Case**: Polyamide (UL94V-0)
- **Movable Contactor**: Copper with silver plating
- **Movable Contacts**: Silver alloy
- **Stationary Contacts**: Silver alloy
- **End Terminals**: Brass with silver plating
- **Common Terminals**: Copper with silver plating
- **Lamp Terminals**: Phosphor bronze with tin plating (illuminated models only)

Environmental Data

- **Operating Temp Range**: –25°C through +70°C (~–13°F through +158°F) for nonilluminated models;
  –25°C through +50°C (~–13°F through +122°F) for illuminated models
- **Humidity**: 90 ~ 95% humidity for 96 hours @ 40°C (104°F)
- **Vibration**: 10 ~ 55Hz with peak-to-peak amplitude of 1.5mm traversing the frequency range & returning
  in 15 minutes; 3 right angled directions for 2 hours
- **Shock**: 50G (490m/s²) acceleration (tested in 6 right angled directions, with 5 shocks in each direction)
- **Sealing**: Dust resistant inner seal

Installation

- **Soldering**: Manual Soldering: See Profile A in Supplement section.
- **Cleaning**: These devices are not process sealed. Hand cleaning locally using alcohol based solution.

Standards & Certifications

- **Flammability Standards**: UL94V-0 for rocker & housing/case
- **UL**: File No. E44145
  All JWS models recognized at 6A @ 125/250V AC
- **CSA**: File No. 023535_0_000
  All JWS models certified at 6A @ 125/250V AC
- **VDE**: License No. 119153
  All JWS models approved at 5A (3A) @ 125/250V AC
Distinctive Characteristics

Rocker caps and housing available in a variety of colors.

Protective barrier available to prevent accidental actuation.

Constructed for dust resistance with interior cover of polyamide between actuator and contact area.

Easy, crisp actuation.

Small size well suited for telecommunication, measuring, automation, and consumer applications.

Terminals are molded in to lock out flux, dust, and other contaminants.

Outer case of heat resistant resin meets UL94V-0 flammability standard.
### TYPICAL SWITCH ORDERING EXAMPLE

#### Rating
- **S**: 10A @ 125/250V AC
- **S**: 6A @ 125/250V AC (UL/CSA)
- **S**: 5A (3A) @ 125/250V AC (VDE)

#### Barriers
- **R**: No Barrier
- **B**: With Barrier

#### Poles
- **1**: SPST
- **2**: DPST

#### Circuit
- **1**: ON | NONE | OFF

#### Cap Colors
- **A**: Black
- **B**: Ivory
- **C**: Red
  - *For Nonilluminated only*

#### Housing Colors
- **A**: Black
  - *For Nonilluminated only*

#### Spot Illumination
- **C**: Red LED
- **D**: Amber LED
- **F**: Green LED

#### Barrier Color
- **A**: Black

---

**IMPORTANT:**
cULus & VDE markings are standard on all models. Models & specific ratings are noted on General Specifications page.

---

**DESCRIPTION FOR TYPICAL ORDERING EXAMPLE**

**JWS21RAA**

- Black Rocker Cap
- DPST ON-NONE-OFF Circuit
- Black Housing/No Barrier
# Internationally Approved Rockers

## Series JWS

### RATING

**S**
- **Power Level**
  - 10A @ 125/250V AC
  - 6A @ 125/250V AC (UL/CSA)
  - 5A (3A) @ 125/250V AC (VDE)

### POLES & CIRCUITS

<table>
<thead>
<tr>
<th>Pole</th>
<th>Model</th>
<th>Rocker Position</th>
<th>Connected Terminals</th>
<th>Throw &amp; Schematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td>JWS11</td>
<td>ON NONE OFF</td>
<td>2-3 OPEN OPEN</td>
<td>SPST</td>
</tr>
<tr>
<td>DP</td>
<td>JWS21</td>
<td>ON NONE OFF</td>
<td>1-3 4-6 OPEN OPEN</td>
<td>DPST</td>
</tr>
</tbody>
</table>

Note: Terminal numbers are actually on the switch.

### BARRIER TYPES & COLORS

- **No Barrier (R)**
  - No-barrier type has a flat flange which is an integral part of the switch.

- **With Barrier (B)**
  - **Barrier Material**: Polyamide
  - **Finish**: Matte
  - **Barrier Color Available**: **A** Black

### CAP COLORS

- **Cap Material**: Polyamide
- **Finish**: Matte
- **Cap Colors Available**: **A** Black, **B** *Ivory*, **C** Red

### HOUSING

- **Material**: Polyamide
- **Finish**: Matte
- **Colors Available**: **A** Black, **B** Ivory (for nonilluminated models only)

### TERMINALS

- **Solder Lug/.187” (4.75mm) Quick Connect**
  - Switch assembly with connectors is not UL, CSA, C-UL, or VDE approved.
  - **Lamp** (spot illuminated models only)

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**B53**
LED COLORS & SPECIFICATIONS FOR SPOT ILLUMINATED MODELS

LEDs are supplied as an integral part of illuminated devices and are not available separately. LED polarity markings are on the bottom of the switch.

The electrical specifications shown here are determined at a basic temperature of 25°C.

If the source voltage exceeds the rated voltage, a ballast resistor is required. The resistor value can be calculated by using the formula in the Supplement section.

<table>
<thead>
<tr>
<th>LED Color</th>
<th>Red</th>
<th>Amber</th>
<th>Green</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>30mA</td>
<td>20mA</td>
<td>30mA</td>
</tr>
<tr>
<td>Voltage</td>
<td>1.8V</td>
<td>2.0V</td>
<td>2.1V</td>
</tr>
<tr>
<td>Reverse</td>
<td>5V</td>
<td>5V</td>
<td>5V</td>
</tr>
</tbody>
</table>

Current Reduction Rate Above 25°C

<table>
<thead>
<tr>
<th>Operating Temperature</th>
<th>No Current Reduction Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>~25°C ~ +50°C</td>
<td>Specified Operating Temperature</td>
</tr>
</tbody>
</table>

Panel Thickness Ranges:

Without Barrier:

.030” ~ .079” (0.75mm ~ 2.0mm)

With Barrier:

.024” ~ .059” (0.6mm ~ 1.5mm)

TYPICAL SWITCH DIMENSIONS

Nonilluminated • No Barrier

Single Pole

Nonilluminated • No Barrier

Double Pole

DPST models have IEC symbols for On-Off on the flange.
TYPICAL SWITCH DIMENSIONS

Single Pole

Nonilluminated • With Barrier

Double Pole

Nonilluminated • With Barrier

DPST models have IEC symbols for On-Off on the flange.

Single Pole

Spot Illuminated • No Barrier

Spot Illuminated • With Barrier

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