HR-Series
HALO ILLUMINATED SEALED ROCKER SWITCH

The HR-Series is a perimeter illuminated, IP68 sealed rocker switch, featuring a stylish, low profile actuator that is available in either two or three positions. These rocker switches have a variety of dependent and independent illumination options; momentary and maintained circuits; and up to two customizable laser-etched legends.

The patented design supports the various illumination options and allows the switch to be rated up to 20 amps, eliminating the need for relays. Additionally, these low profile rocker switches fit the industry standard cutout.

**Product Highlights:**
- Dynamic Perimeter Illumination
- Sealed to IP68 for Above-Panel Components
- 20A 12VDC
- Maintained and Momentary Circuits
- Various Illumination Options
- Single and Double Pole

**Typical Applications:**
- Marine
- On/Off-Highway
- Lawn Equipment
- Golf Carts
- Outdoor Construction Signage
- Any Application Requiring Sealing Protection

**Resources:**
- Configure a Complete Part
- Download CAD & Sales Drawing
- Watch Product Video
HR-Series Switch
DESIGN FEATURES

20A 12VDC RATING
Robust construction to handle a multitude of electrical loads.

SNAP-IN MOUNTING
Fits into an industry standard mounting hole of 1.450 x .830 in. (Same as V-Series and W-Series)

PERIMETER ILLUMINATION
Choice of independent (full) or dependent (half) lighting, in a variety of colors.

IP68 ABOVE PANEL SEALING
Seals out dust and moisture.

.110 TERMINALS
With dedicated TE connector for ease of installation. Sold Separately. (See General Specs for TE Part Numbers).

MAINTAINED/ MOMENTARY
Circuits available in 2 or 3 positions.

LASER ETCHED LEGENDS
Rocker icons convey a clean, sleek OEM look, with independent or dependent illumination.
### Electrical
- **Operating Voltage**: Designed for 12 Volt systems 9-16 V DC operating
- **Contact Rating**: Maximum 20 amps at 12 V DC
- **Supply Voltage ratings**: Tested in accordance with: SAE J1455 section 4.13.1 for power up, operating voltage, over voltage, reverse polarity, and short circuit
- **Dielectric Strength**: Across open contacts: 500 V RMS AC for 1 minute
  - From pole to pole (on multi pole variants) 500 V RMS AC for 1 min.
- **Insulation Resistance**: 50 Megaohms
- **Initial Contact Resistance**: 10 milliohms max
- **Life**: Up to 100,000 cycles, circuit and load dependent
- **Contacts Terminals**:
  - Silver tin-oxide
  - Up to 10 external connector terminals
  - 0.110” wide silver-plated copper terminals
- **Illumination**: One or two LED backlit laser marked icons (configurable to be independent or dependent)
  - Uniform full or half perimeter (configurable to be independent or dependent)
  - Dimmable illumination (icons and perimeter), controlled by supply voltage
  - LEDs rated for 50,000 hour life
- **Seals**: Internal
- **Base**: Nylon, V-0 UL flammability rating
- **Actuator**: Polycarbonate, V-2 UL flammability rating, painted and laser marked
- **Perimeter lens**: Polycarbonate, V-2 UL flammability rating
- **Bracket / Bezel**: Polycarbonate polyester blend, V-0 UL flammability rating

### Environmental
- **Sealing**: IP68, for above-panel components of actual switch only.
- **Operating Temp.**: -40°C to 85°C (may affect endurance)
- **Vibration**:
  - Shock and Bump IEC 60068-2-27, Shock 500 m/s² 11 milliseconds, Bump 200 m/s² 6 milliseconds 600 cycles
  - Salt Spray (Corrosion Resistance) IEC 60068-2-52, Test Kb, Severity level 4 (test duration 336 hours)
  - Moisture Resistance MIL-STD-202 Method 103B, Test Condition A (240 hours)
  - Solar Radiation IEC 60068-2-5, procedure B, 10 cycles, Total irradiation per cycle = 22.4 kWh/m²
  - Chemical Resistance ISO 16750-5, spray or brush method. Gasoline, diesel fuel, motor oil, brake fluid, Armour all, Windex
  - Weathering / Cracking Resistance ASTM D1171-99, method A, 72 hours
  - Abrasion / Wear Resistance 40 cycles of ASTM F2357 testing with 0.25” paper at 175 grams of force

### Connector
- **Switch mates with TE connector housing part number 1418994-1. Based on application wire size choose receptacle part number below (or equivalent):
  - 1-968880-1 20-24 AWG wire
  - 1-968849-1 17-20 AWG wire
  - 1-968851-1 13.5-17 AWG wire
  - 1-968853-1 12 AWG wire

### Mounting Specifications
- **Panel Thickness Range**: 0.062” to 0.187”
- **Panel Cutout**: 0.830” x 1.450”
- **Actuator Travel (Angular Displacement)**:
  - 2 position 24°
  - 3 position 12° from center

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*Manufacturer reserves the right to change product specification without prior notice.*

GPS-0014 Rev: A
### 1 SERIES

**HR-Series Halo Illuminated Rocker Switch**

### 2 CIRCUIT

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<thead>
<tr>
<th>Position:</th>
<th>Single Pole</th>
<th>Double Pole</th>
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<td>18</td>
<td>28</td>
<td>(ON)</td>
<td>OFF</td>
<td>ON</td>
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</table>

### 3 RATING

**D** 20A 12V

### 4 TERMINAL / BASE STYLE

1.110 TAB (QC)

### 5 ILLUMINATION CIRCUIT

**Terminal Connections as viewed from back of switch:**

**FULL PERIMETER ILLUMINATION**

- **Perimeter Illumination:** Independent 9(+) 1(-) for codes A1 to A7

  **Rocker Illumination:**
  - 2 and 3 Position Switches
  - A1: Independent LED 1: 10(+) 1(-) LED 2: 2(+) 1(-)
  - A2: Independent LED 1: 1(+) 1(-) No Illumination
  - A3: No Illumination

- **2 Position Switch**
  - Position 1: LED 1: 5(+) 1(-) LED 2: 5(+) 1(-)
  - Position 2: LED 1: 5(+) 1(-) No Illumination

- **3 Position Switch**
  - Position 1: LED 1: 5(+) 1(-) No Illumination
  - Position 2: LED 2: 5(+) 1(-)

**HALF PERIMETER ILLUMINATION**

- **Rocker Illumination:** LED 1 and 2: 10(+) 1(-)

  **Perimeter Illumination:**
  - 3 Position Switch
    - Position 1: Top Half On
    - Position 2: Full Illumination
    - Position 3: Bottom Half On

For a visual representation of the illumination options, see next page.

For custom illumination options, please consult factory.

### 6 PERIMETER STYLE

1. Full Ring

### 7 PERIMETER ILLUMINATION COLOR

- **B** Blue
- **G** Green

### 8 ROCKER ILLUMINATION COLOR

- **Z** None
- **W** White
- **B** Blue
- **G** Green
- **A** Amber
- **R** Red

### 9 BRACKET COLOR

1. Painted Black
2. Painted Silver

### 10 ROCKER COLOR

1. Painted Black
2. Painted Silver

### 11 ROCKER STYLE

1. Laser Etch

### 12 LEGEND

00. No Legend

For standard legends, see “Standard Legend Codes” page.

For additional legends, please consult factory.

### 13 LEGEND

00. No Legend

For standard legends, see “Standard Legend Codes” page.

For additional legends, please consult factory.

### 14 LEGEND ORIENTATION

1. No Legend
2. Orientation 1
3. Orientation 2
4. Orientation 3

For a visual representation of the orientation options, see next page.

For custom legend options, please consult factory.

Notes:
1. Code (A4) only available with 2 Position Circuits (14, 15, 24, 25)
2. Codes (A5, A6) only available with 2 Position Circuits (11, 12, 13, 14, 15, 21, 22, 23, 24, 25)
3. Codes (A7, B1) only available with 3 Position Circuits (16, 17, 18, 26, 27, 28)
4. 1 milliamp is the recommended minimum load for the switch
### Independent Illumination:

<table>
<thead>
<tr>
<th>2 Position Switch</th>
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<tbody>
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<tr>
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**LEGEND:** Used for illumination representation only. Refer to legend code page for complete list if standard legends.
### Standard Legend Codes:

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### Notes:
1. ISO compliant symbols. Consult factory for custom legends.
2. New legend codes recommended for new part set-ups. Previous codes still valid for existing customers.
Dimensional Specifications: in. [mm]

- 1.050 [26.67]
- 1.580 [40.13]
- 0.395 [7.75]
- 1.947 [49.45]
- 0.820 [20.83]
- 1.642 [41.71]
- 1.432 [36.37]
- 0.830±0.010
  [21.08±0.25]
- 0.005
- 0.005
- 36.83±0.12
- 1.450±0.010
- 0.257
- R0.062 MAX
- 1.57
- PANEL CUTOUT

MATES WITH TE CONNECTOR
1/4-18994-1
Circuit Diagrams:

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Notes:

1. Recommended minimum load per circuit is 1 milliamp.
### Illumination Circuit Diagrams:

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**ILLUMINATION CIRCUIT DIAGRAM**

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Authorized Sales Representatives and Distributors

Click on a region of the map below to find your local representatives and distributors or visit www.carlingtech.com/findarep.

About Carling

Founded in 1920, Carling Technologies is a leading manufacturer of electrical and electronic switches and assemblies, circuit breakers, electronic controls, power distribution units, and multiplexed power distribution systems. With four ISO9001 and IATF16949 registered manufacturing facilities and technical sales offices worldwide, Carling Technologies Sales, Service and Engineering teams do much more than manufacture electrical components, they engineer powerful solutions! To learn more about Carling please visit www.carlingtech.com/company-profile.

To view all of Carling’s environmental, quality, health & safety certifications please visit www.carlingtech.com/environmental-certifications
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