

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.



Resources:

[Configure a Complete Part](#)

[Download CAD & Sales Drawing >](#)

[Watch Product Video](#)



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



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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 VDC operating |
| Contact Rating | Maximum 20 amps at 12 VDC |
| 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 | Silver tin-oxide |
| Terminals | Up to 10 external connector terminals 0.110" wide silver-plated copper terminals |

Physical

| | |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 |

Mounting Specifications

| | |
|-----------------------|-----------------------------------------------------------------------------|
| Panel Thickness Range | 0.062" to 0.187" |
| Panel Cutout | 0.830" x 1.450" See Dimensional Specs (same as V-Series and W-Series) |

Environmental

| | |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sealing | IP68, for above-panel components of actual switch only. |
| Operating Temp. | -40°C to 85°C (may affect endurance) Tested in accordance with Cold Soak (IEC 60068-2-1) Heat Soak (IEC 60068-2-2) Cycling/Shock (IEC 60068-2-14) General: IEC 60068-2-6, Swept sine wave section 8.2, 5 - 500 Hz 20 cycles 10g acceleration Resonance: IEC 60068-2- 6, Vibration sinusoidal, section 8.1, 10 - 2000 Hz, 5g acceleration Random: IEC 60068-2-64, Method 1, random excitation, 10 - 350 Hz, 5 hours in each axis |
| Vibration | IEC 60068-2-27, Shock 500 m/s ² 11 milliseconds, Bump 200 m/s ² 6 milliseconds 600 cycles |
| Shock and Bump | IEC 60068-2-52, Test Kb, Severity level 4 (test duration 336 hours) |
| Salt Spray (Corrosion Resistance) | MIL-STD-202 Method 103B, Test Condition A (240 hours) |
| Moisture Resistance | IEC 60068-2-5, procedure B, 10 cycles, Total irradiation per cycle = 22.4 kWh/m ² |
| Solar Radiation | ISO 16750-5, spray or brush method. Gasoline, diesel fuel, motor oil, brake fluid, Armour all, Windex |
| Chemical Resistance | ASTM D1171-99, method A, 72 hours |
| Weathering / Cracking Resistance | 40 cycles of ASTM F2357 testing with 0.25" paper at 175 grams of force |
| Abrasion / Wear Resistance | |

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 |

Actuator Travel (Angular Displacement)

| | |
|------------|-----------------|
| 2 position | 24° |
| 3 position | 12° from center |



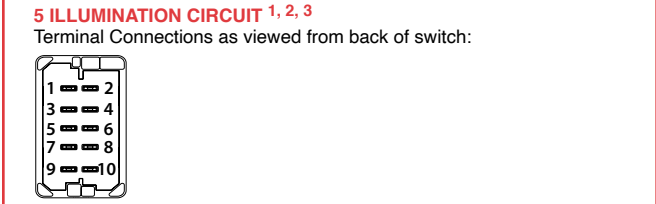
1 SERIES
HR HR-Series Halo Illuminated Rocker Switch

2 CIRCUIT

| Position: | 1 | 2 | 3 |
|-------------|----------|---------------------|----------|
| Single Pole | 5&7, 6&8 | Connected Terminals | 3&5, 4&6 |
| 11 | 21 ON | NONE | OFF |
| 12 | 22 (ON) | NONE | OFF |
| 14 | 24 ON | NONE | ON |
| 15 | 25 ON | NONE | (ON) |
| 16 | 26 ON | OFF | ON |
| 18 | 28 (ON) | OFF | (ON) |

3 RATING 4
D 20A 12V

4 TERMINAL / BASE STYLE
1 .110 TAB (QC)



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: 10(+) 1(-) No Illumination
- A3** No Illumination

2 Position Switch Position 1 Position 3

- A4** Dependent LED 1: 5(+) 1(-) LED 2: 5(+) 1(-)
- A5** Dependent LED 1: 10(+) 1(-) LED 2: 5(+) 1(-)
- A6** Dependent LED 1: 5(+) 1(-) No Illumination

3 Position Switch Position 1 Position 2 Position 3

- A7** Dependent LED 1: 5(+) 1(-) No Illumination LED 2: 5(+) 1(-)

HALF PERIMETER ILLUMINATION

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

Perimeter Illumination:

- | <i>3 Position Switch</i> | <i>Position 1</i> | <i>Position 2</i> | <i>Position 3</i> |
|--------------------------|-------------------|-------------------|-------------------|
| B1 Dependent | Top Half On | Full Illumination | Bottom Half On |
| | 10(+) 2(+) 1(-) | 10(+) 1(-) | 10(+) 9(+) 1(-) |

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

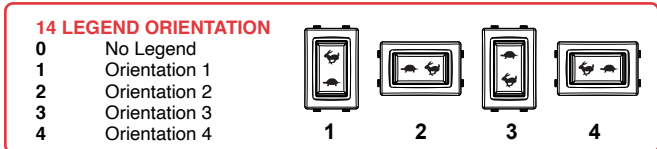
9 BRACKET COLOR
1 Painted Black
2 Painted Silver

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



- 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:

| | | 2 Position Switch | | 3 Position Switch | | |
|----|----|-------------------|------------|-------------------|------------|------------|
| | | Position 1 | Position 3 | Position 1 | Position 2 | Position 3 |
| A1 | | | | | | |
| | A2 | | | | | |
| | A3 | | | | | |

Dependent Illumination:

| | | 2 Position Switch | | 3 Position Switch | | |
|----|----|-------------------|------------|-------------------|------------|------------|
| | | Position 1 | Position 3 | Position 1 | Position 2 | Position 3 |
| A4 | | | | | | |
| | A5 | | | | | |
| | A6 | | | | | |
| A7 | | | | | | |
| | B1 | | | | | |

LEGEND: Used for illumination representation only.
Refer to legend code page for complete list if standard legends.

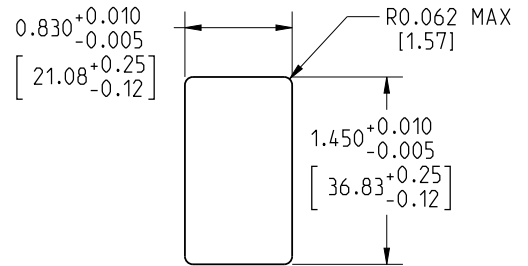
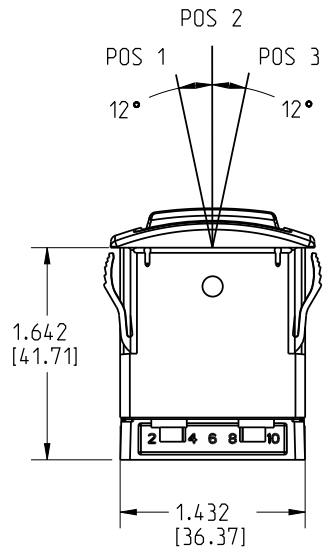
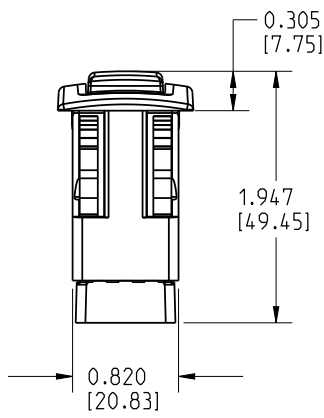
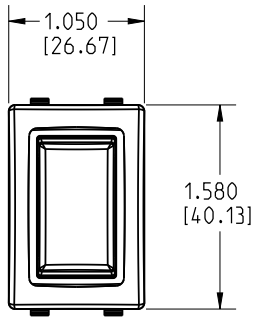
Standard Legend Codes:

| | | | | | | | | | | | | |
|-------------|--------------|------------------|------------------|--------------------|--------------------|-------------------|-------------------|------------------|-------------------|-----------------------|-----------------|-----------------|
| YK | UA | UB | US | UV | UW | UX | UY | MP | MR | PX | MS | MT |
| VU | MW | NZ | NX | NY | YM | VW | PS | PW | PZ | WG | WM | RN |
| RP | YG | TX | NAV LIGHTS VD | COURT LIGHTS VE | PANEL LIGHTS VF | ANCH LIGHTS VG | HEAD LIGHTS SH | FOG LIGHTS SM | DASH LIGHTS SN | DOCK LIGHTS SP | BEACON SR | LIGHT SY |
| DIM WY | BRIGHT WZ | UH | UJ | PD | PE | PF | BILGE PUMP VC | BILGE VJ | UF | UG | MU | TN |
| NS | PB | WIPER SE | VZ | YE | NN | RW | PU | WA | YN | UE | NM | RJ |
| NR | YD | TL | VR | ENG FAN SL | BLWR VA | UC | VN | PK | VY | HORN UZ | RH | NU |
| NV | RB | RC | RK | RL | MZ | RG | UP WS | DOWN WT | UD | UR | WD | TY |
| PA | UK | WATER PUMP WR | UU | UT | ANCHOR YR | PM | VV | WB | TB | TC | TD | TE |
| MY | PV | TA | TZ | WC | PT | PN | PH | RA | TU | TT | ENG HATCH YL | ENG BRAKE SK |
| VS | UL | UM | WK | TS | VT | TCS WL | VP | YJ | PJ | RY | UP | NW |
| NP | RE | RF | PP | PR | TV | PC | YT | YU | PL | WJ | MV | RR |
| TK | RT | SEAT SZ | VX | WF | WH | PG | CRUISE SJ | YA | YB | RM | TM | RD |
| RS | UN | TP | TR | NT | MX | YC | TW | TJ | YF | TH | TF | TG |
| YS | YH | AUX SX | ON OFF RZ | OFF ON YP | I O WN | O I WP | OFF ON WW | ON WX | OFF SA | I SB | O SC | II SD |
| RAISE ST | LOWER SU | HIGH WU | LOW WV | FWD SV | REV SW | DEPTH VB | TRIM TAB VH | ACC VK | NAV ANCH VL | WIND LASS UP/DN VM | LIVE WELL WE | REAR SF |
| PARK SG | AUTO SS | RU | RV | RX | | | | | | | | |

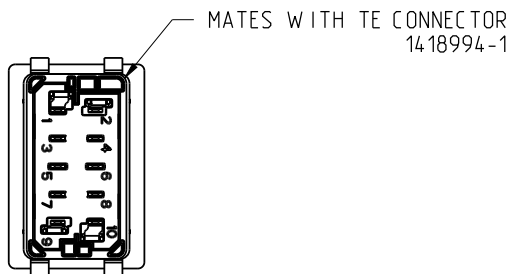
Notes:

- 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]



PANEL CUTOUT



Circuit Diagrams:

| Circuit Code | CIRCUIT DIAGRAM |
|--------------|-----------------|
| 11 | |
| 12 | |
| 14 | |
| 15 | |
| 16 | |
| 18 | |

| Circuit Code | CIRCUIT DIAGRAM |
|--------------|-----------------|
| 21 | |
| 22 | |
| 24 | |
| 25 | |
| 26 | |
| 28 | |

Notes:
 1 Recommended minimum load per circuit is 1 milliamp

Illumination Circuit Diagrams:

| Illumination Code | ILLUMINATION CIRCUIT DIAGRAM |
|-------------------|------------------------------|
| A1 | |
| A2 | |
| A3 | |
| A4 | |

| Illumination Code | ILLUMINATION CIRCUIT DIAGRAM |
|-------------------|------------------------------|
| A5 | |
| A6 | |
| A7 | |
| B1 | |

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

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JONHON

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