

# HR-Series

Sealed Rocker Switches

**PRODUCT WEBPAGE**

*request sample, configure part, watch video*



## Perimeter Illuminated Low Profile Actuator

The HR-Series comes with 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.

**1-2**  
Poles

**20**  
Amps

**12**  
VDC Max

**IP68 Sealing**  
Above-Panel

## Typical Applications

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

# 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

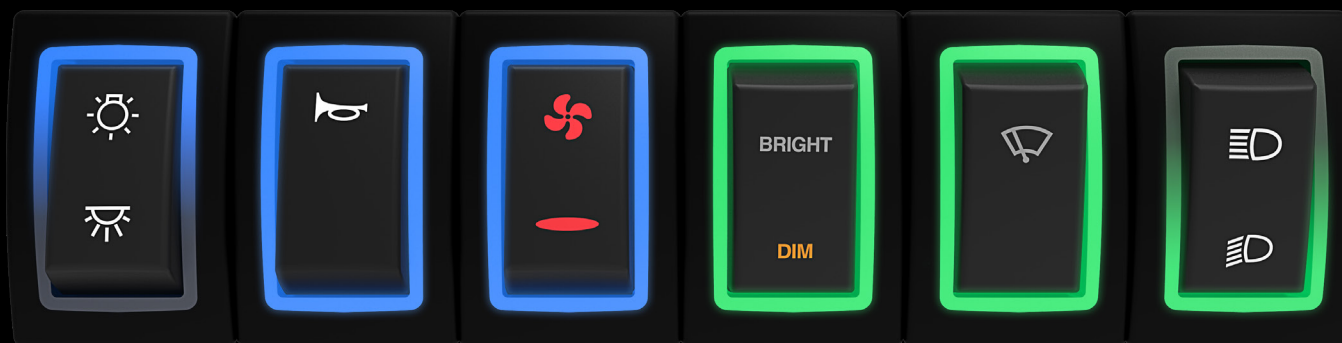
With dedicated TE connector for ease of installation. Sold Separately. (See General Specs for TE Part Numbers)

## 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.



# Tech Specs

## Electrical

|                            |                                                                                                                                                                     |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating Voltage          | Designed for 12 Volt systems 9-16 VDC operating                                                                                                                     |
| Contact Rating             | Maximum 20 amps at 12 VDC                                                                                                                                           |
| Supply Voltage Ratings     | The switch passes the following supply voltage testing: 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 minute.                                              |
| 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 illumination (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                                                                                                                                                                                                                                      |

## Actuator Travel (Angular Displacement)

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

## Environmental

|                                   |                                                                                                                                                                                                                                                                                    |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sealing                           | IP68, for above-panel components of actual switch only.                                                                                                                                                                                                                            |
| Operating Temperature             | -40°C to 85°C<br>The following codes were passed:<br>Cold Soak (IEC 60068-2-1)<br>Heat Soak (IEC 60068-2-2)<br>Cycling/Shock (IEC 60068-2-14)                                                                                                                                      |
| Vibration                         | General: IEC 60068-2-6, Swept sine wave section 8.2, 5 - 500 Hz 20 cycles 10g acceleration<br>Resonance: IEC 60068-2-6, Vibration sinusoidal, section 8.1, 10 - 2000 Hz, 5g acceleration<br>Random: IEC 60068-2-64, Method 1, random excitation, 10 - 350 Hz, 5 hours in each axis |
| Shock and Bump                    | IEC 60068-2-27, Shock 500 m/s <sup>2</sup> 11 milliseconds, Bump 200 m/s <sup>2</sup> 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/m <sup>2</sup>                                                                                                                                                                                       |
| 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):

|            |                  |
|------------|------------------|
| 1-968849-1 | 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" See Dimensions (same as V-Series and W-Series) |

# Ordering Scheme

Sample Part Number **HR 11 D 1 A1 1 B A 1 - 1 1 - 00 00 0**

Selection 1 2 3 4 5 6 7 8 9 10 11 12 13 14

## 1. SERIES

**HR** Halo Illuminated Rocker Switch

## 2. CIRCUIT

( ) = momentary. SP = Single Pole. DP = Double Pole.

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

## 3. RATING

( 4 )

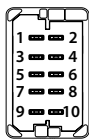
**D** 20A 12V

## 4. TERMINAL / BASE STYLE

**1** .110 TAB (QC)

## 5. ILLUMINATION CIRCUIT ( 1, 2, 3 )

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: 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:

3 Position Switch Position 1 Position 2 Position 3  
**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 Etched

## 12. LEGEND

**00** No legend

For standard legends, see "Standard Legend Codes" page.  
For additional legends, please consult factory

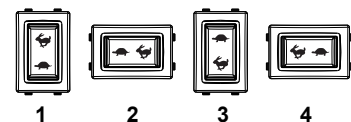
## 13. LEGEND

**00** No legend

For standard legends, see "Standard Legend Codes" page.  
For additional legends, please consult factory

## 14. LEGEND ORIENTATION

**0** No legend  
**1** Orientation 1  
**2** Orientation 2  
**3** Orientation 3  
**4** Orientation 4



Notes:

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

[Configure Complete Part Number >](#)

[Browse Standard Parts >](#)

# Illumination Options (Perimeter and Legend)

## Independent Illumination:

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

## Dependent Illumination:

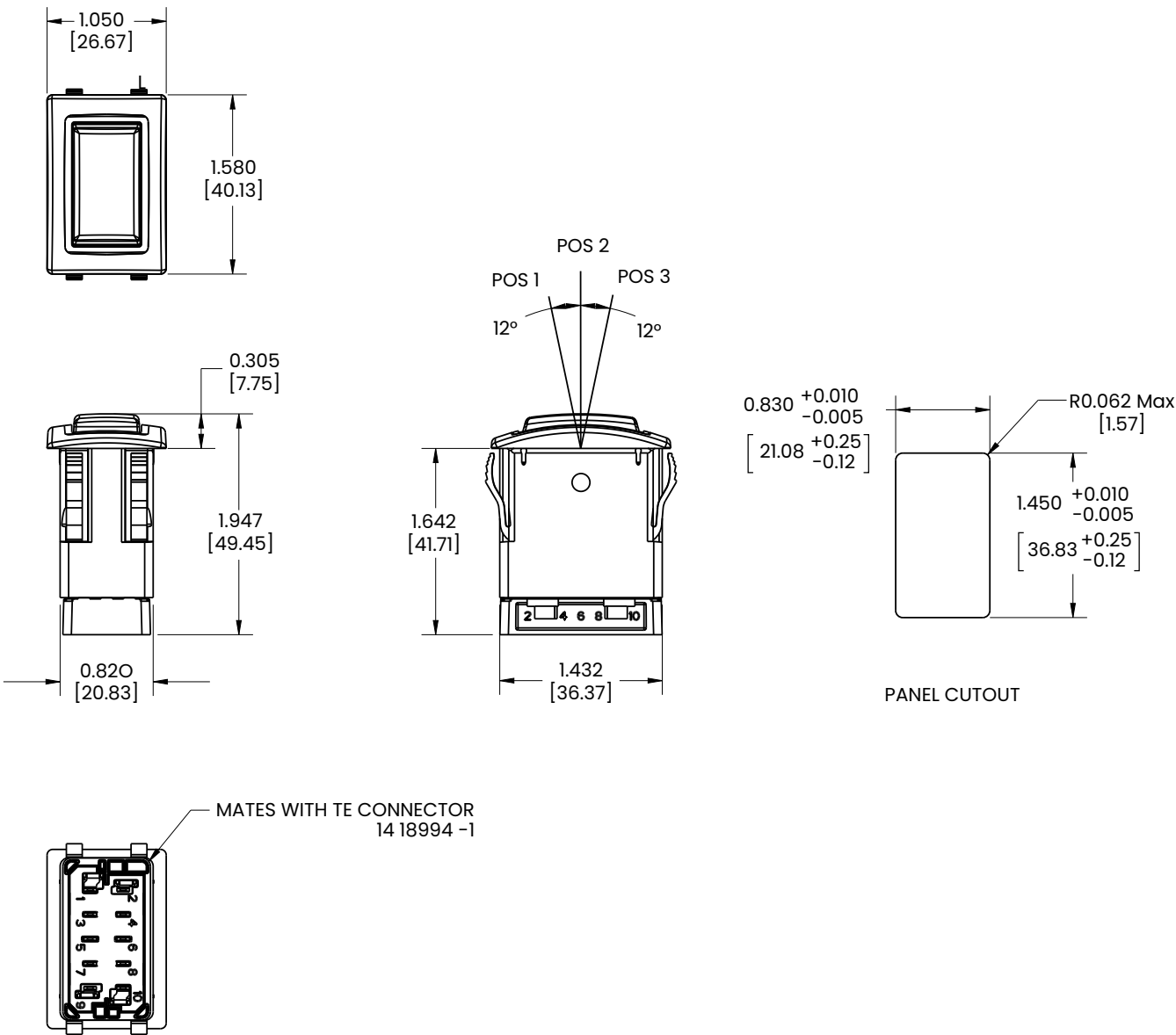
| 2 Position Switch |                                                                                     |                                                                                     |
|-------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------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

| 3 Position Switch |                                                                                     |                                                                                       |                                                                                       |
|-------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                   | Position 1                                                                          | Position 2                                                                            | Position 3                                                                            |
| A7                |  |  |  |
| B1                |  |  |  |

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

# Dimensional Specs

inches [millimeters]



# 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                |                              |

# 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   | VD  | VE  | VF  | VG    | SH       | SM   | SN       | SP              | SR        | SY   |
|       |        |      |     |     |     |       |          |      |          |                 |           |      |
| DIM   | BRIGHT | UH   | UJ  | PD  | PE  | PF    | VC       | VJ   | UF       | UG              | MU        | TN   |
|       |        |      |     |     |     |       |          |      |          |                 |           |      |
| NS    | PB     | SE   | VZ  | YE  | NN  | RW    | PU       | WA   | YN       | UE              | NM        | RJ   |
|       |        |      |     |     |     |       |          |      |          |                 |           |      |
| NR    | YD     | TL   | VR  | SL  | VA  | UC    | VN       | PK   | VY       | UZ              | RH        | NU   |
|       |        |      |     |     |     |       |          |      |          |                 |           |      |
| NV    | RB     | RC   | RK  | RL  | MZ  | RG    | UP       | DOWN | UD       | UR              | WD        | TY   |
|       |        |      |     |     |     |       |          |      |          |                 |           |      |
| PA    | UK     | WR   | UU  | UT  | YR  | PM    | VV       | WB   | TB       | TC              | TD        | TE   |
|       |        |      |     |     |     |       |          |      |          |                 |           |      |
| MY    | PV     | TA   | TZ  | WC  | PT  | PN    | PH       | RA   | TU       | TT              | YL        | SK   |
|       |        |      |     |     |     |       |          |      |          |                 |           |      |
| VS    | UL     | UM   | WK  | TS  | VT  | WL    | VP       | YJ   | PJ       | RY              | UP        | NW   |
|       |        |      |     |     |     |       |          |      |          |                 |           |      |
| NP    | RE     | RF   | PP  | PR  | TV  | PC    | YT       | YU   | PL       | WJ              | MV        | RR   |
|       |        |      |     |     |     |       |          |      |          |                 |           |      |
| TK    | RT     | SZ   | VX  | WF  | WH  | PG    | SJ       | YA   | YB       | RM              | TM        | RD   |
|       |        |      |     |     |     |       |          |      |          |                 |           |      |
| RS    | UN     | TP   | TR  | NT  | MX  | YC    | TW       | TJ   | YF       | TH              | TF        | TG   |
|       |        |      |     |     |     |       |          |      |          |                 |           |      |
| YS    | YH     | SX   | RZ  | YP  | WN  | WP    | WW       | WX   | SA       | SB              | SC        | SD   |
|       |        |      |     |     |     |       |          |      |          |                 |           |      |
| RAISE | LOWER  | HIGH | LOW | FWD | REV | DEPTH | TRIM TAB | ACC  | NAV ANCH | WIND LASS UP/DN | LIVE WELL | REAR |
|       |        |      |     |     |     |       |          |      |          |                 |           |      |
| ST    | SU     | WU   | WV  | SV  | SW  | VB    | VH       | VK   | VL       | VM              | WE        | SF   |
|       |        |      |     |     |     |       |          |      |          |                 |           |      |
| PARK  | AUTO   | RU   | RV  | RX  |     |       |          |      |          |                 |           |      |
|       |        |      |     |     |     |       |          |      |          |                 |           |      |
| SG    | SS     |      |     |     |     |       |          |      |          |                 |           |      |

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