AV/AVH-Series
ANTI-VANDAL PUSHBUTTON SWITCHES

The AV/AVH-Series sealed switch product line features a sleek, stainless design with various LED illumination options. These single pole switches are available with momentary and maintained circuits, with quick connect tab terminals for easy installation and daisy chaining.

The high powered AVH-Series also features ratings up to 30 amps, and safeguards internal switch circuitry with integrated overload protection and thermal cut off, while providing superior safety and performance capabilities. Switching options include ON-OFF, as well as progressive circuits perfectly suited for NAV/ANCHOR functions.

Product Highlights:
• Sealed to IP67 for Above-Panel Components
• High Current Ratings
• Momentary and Maintained Circuits
• LED Halo Illumination
• UL1500 Ignition Protection

Typical Applications:
• Marine
• Industrial Controls
• Security Panels
• Public Transit Systems
• Traffic Signals
• Emergency Phones
• Harsh and/or Outdoor Environments

Resources:
Configure a Complete Part
Download CAD & Sales Drawing
Watch Product Video

Carling Technologies, Inc.
60 Johnson Avenue, Plainville, CT 06062
Email: sales@carlingtech.com
Application Support: team2@carlingtech.com
Phone: 860.793.9281  Fax: 860.793.9231
www.carlingtech.com
### Electrical

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Rating</td>
<td>10.1A Resistive @ 12VDC</td>
</tr>
<tr>
<td>LED Rating</td>
<td>12 VAC/DC @ 15mA</td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>1000V RMS 50~60 Hz</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>50 M-ohms min. @ 500VDC</td>
</tr>
<tr>
<td>Initial Contact Resistance</td>
<td>≤10 mΩ</td>
</tr>
<tr>
<td>Electrical Endurance</td>
<td>Up to 25K Cycles</td>
</tr>
<tr>
<td>Contacts</td>
<td>Silver alloy</td>
</tr>
<tr>
<td>Terminals</td>
<td>.110” x 0.020 [2.79 x 0.5 mm] plug-in terminal, copper alloy silver plate.</td>
</tr>
</tbody>
</table>

### Physical

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function</td>
<td>NO / NC contact (changeover)</td>
</tr>
<tr>
<td>Operation</td>
<td>Momentary or maintained</td>
</tr>
<tr>
<td>Illumination</td>
<td>Independent LED</td>
</tr>
<tr>
<td>Seals</td>
<td>Silicone, Bezel and Button</td>
</tr>
<tr>
<td>Mounting</td>
<td>M19-P1.0 Nut (SUS316), Tightening torque: 2~3Nm.</td>
</tr>
<tr>
<td>Base</td>
<td>Glass filled Nylon</td>
</tr>
<tr>
<td>Actuator</td>
<td>Stainless Steel 316</td>
</tr>
<tr>
<td>Lens</td>
<td>Polycarbonate, PC</td>
</tr>
<tr>
<td>Bushing</td>
<td>Stainless Steel 316</td>
</tr>
<tr>
<td>Actuation Force</td>
<td>7N max</td>
</tr>
<tr>
<td>Weight</td>
<td>18g</td>
</tr>
</tbody>
</table>

### Environmental

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Temperature</td>
<td>-55°C to +85°C</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-30°C to +70°C (may affect endurance)</td>
</tr>
<tr>
<td>Vibration, High Frequency</td>
<td>Mil-Std 202G, Method 204D, Test Condition A 0.06 DA or 10G’s 10-500 Hz. Test criteria- No loss of circuit during test and pre and post test contact resistance.</td>
</tr>
<tr>
<td>Vibration, Random</td>
<td>Mil-Std 202G, Method 214A, Test Condition I and B 7.56G’s RMS, 8-hours in each of the 3 mutually perpendicular axes. Test criteria- No loss of circuit during test and pre and post test contact resistance.</td>
</tr>
<tr>
<td>Thermal Shock</td>
<td>MIL-STD 202G Method 107G, Condition A (Five cycles @ -55°C to +25°C to +85°C to +25°C)</td>
</tr>
<tr>
<td>Moisture Resistance</td>
<td>MIL-STD 202G Method 106G, i.e.10~24-hour cycles @ +25°C to +60°C, 80-90% RH.</td>
</tr>
<tr>
<td>Sealing</td>
<td>IP67, for above-panel components of the actual switch; compliant with IEC 60529.</td>
</tr>
<tr>
<td>Ignition Protection</td>
<td>UL1500, ISO 8846, SAE J1171</td>
</tr>
<tr>
<td>Electro-Static Discharge</td>
<td>Compliant with EN61000-4-2</td>
</tr>
<tr>
<td>Discharge Level</td>
<td>Max. ±8KV; Discharge Level: Max. ±15KV</td>
</tr>
</tbody>
</table>

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

GPS-0003 Rev. B
## AV-Series Anti-Vandal Pushbutton Switch - Ordering Scheme & Dimensional Specifications

### Series

1. **AV** - Anti-Vandal Pushbutton Switch

### Mounting

1. **1** - M19 Threaded Bushing

### Material / Finish

1. **2** - Stainless Steel Bushing / Button

### Circuit

1. **3** - Momentary NC / NO
2. **4** - Maintained NC / NO

### Rating

1. **5** - 10.1A Resistive, 12VDC

### Termination

1. **6** - .110” Quick Connect Tabs - Silver Plated

### Lens / Button

1. **7** - Flush

### LED Color

1. **8** - Green
2. **9** - White
3. **10** - Red
4. **11** - Amber
5. **12** - Blue

### Illumination Style

1. **13** - None
2. **14** - Ring

### Legend

1. **15** - On/Off
2. **16** - Stand By
3. **17** - Light
4. **18** - Bell
5. **19** - Door Open
6. **20** - Information
7. **21** - Horn

## Dimensional Specifications: in. [mm]

### Non-Illuminated with Nut

- Diameter: 1.00 ± 0.008 [25.4 ± 0.20 mm]
- Nut Size: M6

### Illuminated with Nut

- Diameter: 1.03 ± 0.01 [26.16 ± 0.25 mm]
- Nut Size: M6

### MOUNTING CUT-OUTS (RECOMMENDED SWITCH SPACING)

- Diameter: 1.06 in [27 mm]
- Spacing: 1.56 in [39.6 mm]

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For more details, see the provided illustrations. Contact us for any inquiries or support.

Email: sales@carlingtech.com  Application Support: team2@carlingtech.com
Phone: (860) 793–9281  Fax: (860) 793–9231  www.carlingtech.com
AVH-Series

Electrical
Supply Voltage Range 9VDC – 16VDC
Overtemp. Protection ≥150°C (SmartFET temperature), Latched status signal
Reverse Polarity Protection 16 VDC
Insulation Resistance 50 M-ohms min. @500VDC
Initial Contact Resistance ≤10 mΩ
Electrical Endurance Up to 50K Cycles

Circuit B (High-Current Latching)
Current Rating 20A 12VDC, 80A surge (300 ms), 14 AWG lead wire
30A 12VDC, 100A surge (300 ms), 12 AWG lead wire
Function ON / OFF
Overload Protection ≥135A, Output does not function. Switch is reset by cycling through OFF position (unless overload continues).
Connections 14AWG, 12 AWG Lead Wire (20A, 30A, respectively), 6” Lg.
0.187” PC Quick Connect Terminal Ground Connection.

Circuit C (Nav-Anchor)
Current Rating 10A total, 5A each Output; 10A surge each Output (300 ms)
Function NAV-ANC, First press: Load 1 ON & Load 2 ON, Red Ring Illuminated
Second press: Load 1 ON, Load 2 OFF, Blue Ring Illuminated
Third Press: OFF
Overload Protection ≥60A, Output does not function. Switch is reset by cycling through OFF position (unless overload continues).
Connections 16AWG, 5a per Output, 6” Lg.
0.187” PC Quick Connect Terminal Ground Connection.

Circuit D (Dual-Output)
Current Rating 10A total, 5A each Output; 10A surge each Output (300 ms)
Function First press: OFF
Second press: Load 1 ON, Load 2 OFF, Red Ring Illuminated
Third Press: Load 1 OFF, Load 2 ON, Blue Ring Illuminated.
Overload Protection ≥60A, Output does not function. Switch is reset by cycling through OFF position (unless overload continues).
Connections 16AWG, 5a per Output, 6” Lg.
0.187” PC Quick Connect Terminal Ground Connection.

Physical
Operation Push button, Momentary (Circuit C & D), Maintained (Circuit B)
Illumination Dependent LED
Seals Gasket, bezel silicone, potted housing
Mounting M19-P1.0 Nut, Tightening torque: 2~3Nm
Housing Aluminum 6061 T6, Anodized per MIL-STD-8625, Type II, Class 2; Black
Actuator Stainless steel 316
Lens Polycarbonate, PC
Bushing Stainless steel 316
Actuation Force 7N max
Weight 45-50g

Environmental
Storage Temperature -55°C to +85°C
Operating Temperature -30°C to +70°C (may affect endurance)
Vibration Mil-Std 202G, Method 204D, Test Condition A 0.06 DA or 10G’s 10-500 Hz. Test criteria - No loss of circuit during test and pre and post test contact resistance.
Vibration, Random Mil-Std 202G, Method 214A, Test Condition I and B 7.56G’s RMS, 8-hours in each of the 3 mutually perpendicular axes. Test criteria - No loss of circuit during test and pre & post test contact resistance.
Shock Mil-Std 202G, Method 213B, Test Condition K @ 30g’s,11ms normal duration. No resistance value loss pre and post test and no function malfunction. No loss of contact or unintended contact making.
Thermal Shock MIL-STD 202G Method 107G, Condition A (Five cycles @ -55°C to +25°C to +85°C to +25°C)
Moisture Resistance MIL-STD 202G Method 106G, i.e.10~24-hour cycles @ +25°C to +60°C, 80-90% RH.
Sealing IP67, for above-panel components of the actual switch compliant with IEC 60529.
Ignition Protection UL1500, ISO 8846, SAE J1171

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GPS-0019 Rev. A
# AVH–Series Anti-Vandal High Current Pushbutton Switch - Ordering Scheme & Dimensional Specifications

## 1 SERIES

**AVH** Anti-Vandal High Current Pushbutton Switch

## 2 MOUNTING

1. **AVH** M19 Threaded Bushing

## 3 MATERIAL / FINISH

1. Stainless Steel Bushing / Button

## 4 CIRCUIT 1, 2

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>ON - OFF (Output 1 - None)</td>
<td>Maintained</td>
</tr>
<tr>
<td>C</td>
<td>ON - OFF (Output 1 - None)</td>
<td>Momentary</td>
</tr>
<tr>
<td>D</td>
<td>OFF - ON - OFF (None - Output 1 - Output 2)</td>
<td>Momentary</td>
</tr>
</tbody>
</table>

## 5 RATING

1. 30A 12VDC
2. 20A 12VDC
3. 5A 12VDC (Per Output) / 10A 12VDC (Total)

## 6 WIRE LENGTH

6 inches (152.4 mm) with 0.187” (4.8mm) Ground Tab Terminal

## 7 ILLUMINATION STYLE

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>None</td>
</tr>
<tr>
<td>R</td>
<td>Ring</td>
</tr>
</tbody>
</table>

## 8 POSITION 1 LED COLOR

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>No LED</td>
</tr>
<tr>
<td>A</td>
<td>Red</td>
</tr>
<tr>
<td>B</td>
<td>Green</td>
</tr>
<tr>
<td>C</td>
<td>Amber</td>
</tr>
<tr>
<td>D</td>
<td>White</td>
</tr>
<tr>
<td>E</td>
<td>Blue</td>
</tr>
</tbody>
</table>

## 9 POSITION 2 LED COLOR

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>No LED</td>
</tr>
<tr>
<td>E</td>
<td>Blue</td>
</tr>
</tbody>
</table>

## 10 ILLUMINATION TYPE

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>None</td>
</tr>
<tr>
<td>A</td>
<td>Dependent (LED illuminates when the specified output is “ON”)</td>
</tr>
</tbody>
</table>

### Notes:

1. Circuit code B requires rating code 1 or 2 only.
2. Circuit codes C & D require rating code 3.
3. Rating will determine the wire gauge used.
4. Illumination Style code N requires: Position 1 LED Color N; Position 2 LED Color code N; Illumination Type code N.
5. Circuit codes C & D require Position 2 LED Color E.
6. Circuit code B requires Position 2 LED Color code N.
7. Other lighting options available: Consult Manufacturer.

## Dimensional Specifications: in. [mm]

- **Non-Illuminated with Nut:**
  - Diameter: 0.866 ± 0.020 [22 ± 0.5]
  - Height: 0.955 ± 0.020 [24 ± 0.5]

- **Ring-Illuminated with Nut:**
  - Diameter: 0.633 ± 0.020 [16 ± 0.5]

### MOUNTING CUT-OUTS (RECOMMENDED SWITCH SPACING)

- Diameter: 0.748 ± 0.004 [19 ± 0.04]
- Height: 0.30 [8 ± 0.11]

### CIRCUIT B:
- Battery(+) Red Wire
- Load 1: Orange Wire
- Ground: Tab or Black

### CIRCUIT C:
- Battery(+) Red Wire
- Load 1: Blue Wire
- Load 2: White Wire
- Ground: Tab

### CIRCUIT D:
- Battery(+) Red Wire
- Load 1: Blue Wire
- Load 2: Orange Wire
- Ground: Tab
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