

# AV-Series

## 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.



#### Resources:

[Configure a Complete Part](#)

[Download CAD & Sales Drawing >](#)

[Watch Product Video](#)



#### 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



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**Electrical**

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

**Physical**

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

**Environmental**

Storage Temperature	-55°C to +85°C
Operating Temperature	-30°C to +70°C (may affect endurance)
Vibration, High Frequency	Mil-Std 202G, Method 204D, Test Condition A 0.06 DA or 10G <sup>1</sup> 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 <sup>1</sup> 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.
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
Electro-Static Discharge	Compliant with EN61000-4-2 Discharge Level: Max. ±8KV; Discharge Level: Max. ±15KV

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

GPS-0003 Rev: B



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

**2 MOUNTING**  
**1** M19 Threaded Bushing

**3 MATERIAL / FINISH**  
**1** Stainless Steel Bushing / Button

**4 CIRCUIT**  
**A** Momentary NC / NO    **B** Maintained NC / NO

**5 RATING**  
**2** 10.1A Resistive, 12VDC

**6 TERMINATION**  
**1** .110" Quick Connect Tabs - Silver Plated

**7 LENS / BUTTON**  
**1** Flush

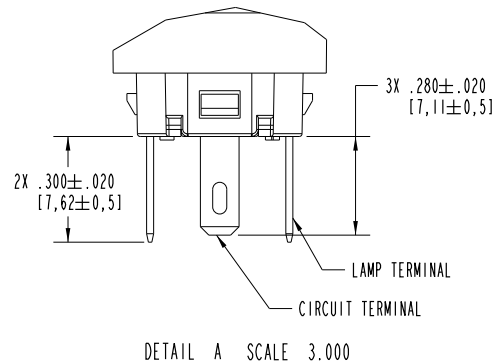
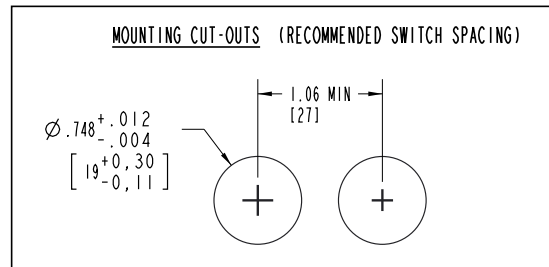
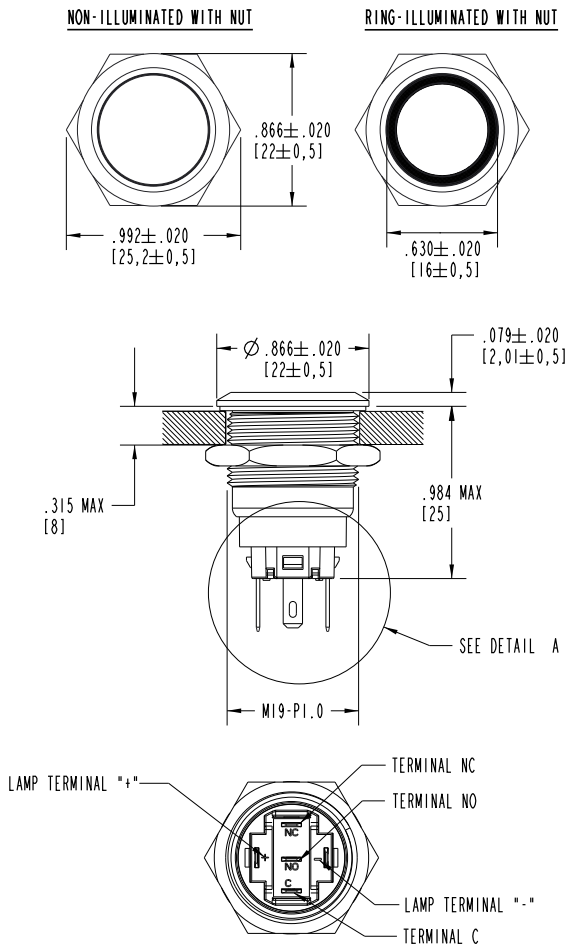
**8 LED COLOR**  
**N** No LED    **B** Green    **D** White  
**A** Red    **C** Amber    **E** Blue

**9 ILLUMINATION STYLE**  
**N** None    **R** Ring

**10 LEGEND**  
**00** No Legend

<b>01</b> On/Off 	<b>02</b> Stand By 	<b>03</b> Light 	<b>04</b> Bell 
<b>05</b> Door Open 	<b>06</b> Information 	<b>07</b> Horn 	

**Dimensional Specifications: in. [mm]**



## 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) <sup>1</sup>

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) <sup>2</sup>

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 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) <sup>2</sup>

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 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

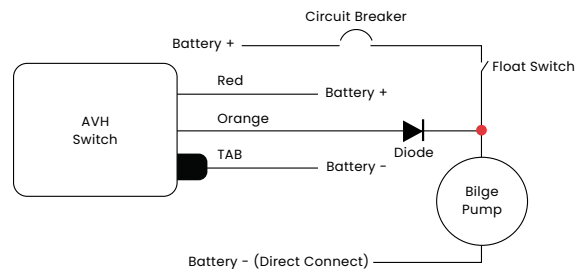
Operation	Push button, Momentary (Circuit C & D), Maintained (Circuit B)
Illumination	Dependent LED
Seals	Gasket, bezel silicone, potted housing
Mounting	M19-P1.0 Nut, Tightening torque: 2~3Nm
Housing	Aluminum 6061 T6, Anodized per MIL-STD-8625, Type II, Class 2; Black
Actuator	Stainless steel 316
Lens	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 <sup>1</sup> 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 <sup>1</sup> 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

#### Notes:

- The switch was designed to directly control the load and is not recommended for any application where the load may be removed via another switch.
- For backfeed protection, it is recommended to use a diode in series for pump control circuits as shown below.



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GPS-0019 Rev: A



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

**2 MOUNTING**  
**1** M19 Threaded Bushing

**3 MATERIAL / FINISH**  
**1** Stainless Steel Bushing / Button

**4 CIRCUIT 1, 2**  
**B** ON - OFF (Output 1 - None) Maintained  
**C** ON - ON - OFF (Output 1&2 - Output 1 - None) Momentary  
**D** OFF - ON - ON (None - Output 1 - Output 2) Momentary

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

**6 WIRE LENGTH**  
**6** 6 inches (152.4 mm) with 0.187" (4.8mm) Ground Tab Terminal

**7 ILLUMINATION STYLE 4**  
**N** None    **R** Ring

**8 POSITION 1 LED COLOR**  
**N** No LED    **B** Green    **D** White  
**A** Red    **C** Amber    **E** Blue

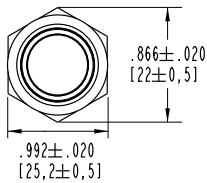
**9 POSITION 2 LED COLOR 5, 6**  
**N** No LED    **E** Blue

**10 ILLUMINATION TYPE 7**  
**N** None  
**A** Dependent (LED illuminates when the specified output is "ON")

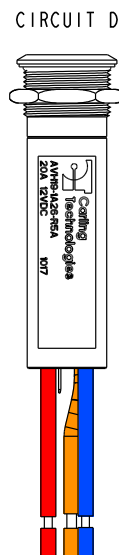
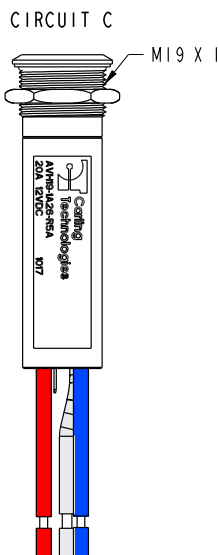
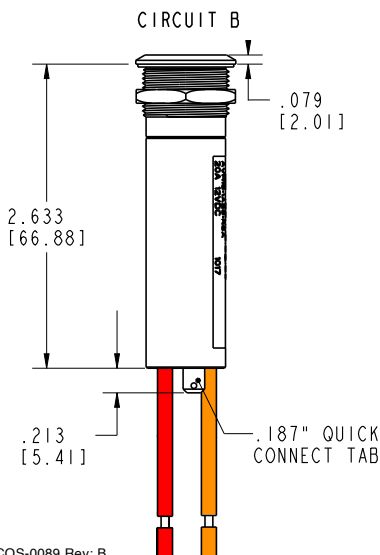
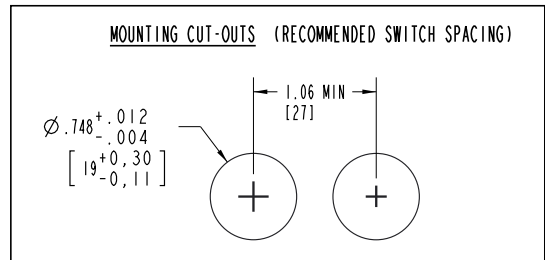
- Notes:  
 1 Circuit code B requires rating code 1 or 2 only.  
 2 Circuit codes C & D require rating code 3.  
 3 Rating will determine the wire gauge used.  
 4 Illumination Style code N requires: Position 1 LED Color N; Position 2 LED Color code N; Illumination Type code N.  
 5 Circuit codes C & 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



RING-ILLUMINATED WITH NUT



- 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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