AV series

Tactile security pushbutton switches with overmolded actuator • Ø 19 or 22 mm

DISTINCTIVE FEATURES

Tactile feedback
Illuminated or non-illuminated
Momentary (NO)
Overmolded marking available

ENVIRONMENTAL SPECIFICATIONS

• Front panel sealing : IP67 or IP69K according to IEC 60529
• Operating temperature : -30 °C to +70 °C (-22 °F to +158 °F)

ELECTRICAL SPECIFICATIONS

• Max. current/voltage rating with resistive load : 50 mA 24 VDC
• Initial contact resistance : 100 mΩ max.
• Insulation resistance : 1,000 MΩ min. at 500 VDC
• Dielectric strength : 500 Vrms 50 Hz min. between terminals
2,000 Vrms 50 Hz min. between terminals and frame
• Electrical life : 1,000,000 cycles at full load

LED COMPONENT SPECIFICATIONS

<table>
<thead>
<tr>
<th>LED color</th>
<th>Forward current</th>
<th>Typ. forward voltage</th>
<th>Max. forward voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>20 mA</td>
<td>3.3 V</td>
<td>3.8 V</td>
</tr>
<tr>
<td>Green</td>
<td>20 mA</td>
<td>4 V</td>
<td>4.5 V</td>
</tr>
<tr>
<td>Yellow</td>
<td>20 mA</td>
<td>2 V</td>
<td>2.5 V</td>
</tr>
<tr>
<td>Red</td>
<td>20 mA</td>
<td>1.95 V</td>
<td>2.5 V</td>
</tr>
<tr>
<td>White</td>
<td>20 mA</td>
<td>3.3 V</td>
<td>4 V</td>
</tr>
<tr>
<td>Amber</td>
<td>20 mA</td>
<td>2.3 V</td>
<td>2.8 V</td>
</tr>
<tr>
<td>Red / green</td>
<td>20 mA</td>
<td>1.85 V / 2.2 V</td>
<td>2.5 V</td>
</tr>
</tbody>
</table>

A resistor must be series-connected by the user
Resistor value = supply voltage - LED forward voltage

The company reserves the right to change specifications without notice.
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GENERAL SPECIFICATIONS

- **Travel**: 0.7 mm (.027) ± 0.1 mm (.003)
- **Operating force**: 7 N ± 2N - Sealing option K will increase the operating force.
- **Torque**: 5 Nm min. - 14 Nm max. applied to nut
- **Panel thickness**: 1 (.039) to 6 mm (.236) max.
- **Hand soldering**: 270 °C (518 °F), 3 sec. max.

MATERIALS

- **Case**: PA46 UL94-V0
- **Terminals**: brass, gold plated
- **Contacts**: gold plated dome
- **Bushing**: see following pages
- **Actuator**: stainless steel, with thermoplastic overmolding
- **LED**

APEM products may be recycled at end-of-life for the re-claiming of valuable metal components.

ELECTRICAL FUNCTIONS

Function 3 (NO)

MOUNTING

- **Panel cut-out**: Ø 19.2 mm (.755), or Ø 22.2 mm (.874)
- **Min. pitch for matrix mounting**: 30 mm x 30 mm (1.181x1.181)
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**BUILD YOUR PART NUMBER**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>BUSHING DIAMETERS</th>
<th>ILLUMINATION</th>
<th>CONTACTS</th>
<th>TERMINALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AV</td>
<td>9 19 (748)</td>
<td>D Gold plated dome</td>
<td></td>
<td>2 Solder</td>
</tr>
<tr>
<td></td>
<td>3 22 (866)</td>
<td>S0 No</td>
<td></td>
<td>9 Screw</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SL Illuminated</td>
<td></td>
<td>4 Straight PC terminals</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F Overmolded flying leads, IP65</td>
</tr>
</tbody>
</table>

**BASE PART NUMBER**

**OPTIONS**

**BUSHING MATERIALS**

- 0 (std) Nickel plated brass
- 2 Chrome plated brass
- 4 Stainless steel
- 5 Gold plated brass
- 6 Chrome plated brass, satin
- 7 Chrome plated brass, black

**OVERMOLDING COLORS**

- 1 Blue
- 2 Black*
- 3 Green
- 4 Grey*
- 5 Yellow
- 6 Red
- 7 White
- 8 Translucent
- 9 Orange

* non-illuminated only

**LED COLORS**

- 1 Blue
- 2 Red/green
- 3 Green* (high intensity)
- 4 Yellow
- 5 Red / green

**ACTUATOR STYLES**

- 002 Illuminated ring
- 006 Validation
- 009 Standby
- 010 Cancel
- 011 Power

**OVERMOLDING COLORS**

- 1 Blue
- 2 Red / green
- 3 Green
- 4 Yellow

**SEALING**

- Blank No sealing
- K Sealed to IP67 or IP69K

**ABOUT THIS SERIES**

On the following pages, you will find successively basic part numbers of switches and options in the same order as in above chart.

**Notice:** please note that not all combinations of above numbers are available. Refer to the following pages for further information.

**Mounting accessories:** standard hardware supplied: 1 hex nut. Standard and special hardware is presented in the “Hardware” section of website.
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BUSHING Ø 19 (.748) - FLAT ACTUATOR SOLDER LUG TERMINALS

Illuminated
AV9SLD2

Non-illuminated
AV9S0D2

BUSHING Ø 19 (.748) - FLAT ACTUATOR SCREW TERMINALS

Illuminated
AV9SLD9

Non-illuminated
AV9S0D9

BUSHING Ø 22 (.866) - FLAT ACTUATOR SOLDER LUG TERMINALS

Illuminated
AV3SLD2

Non-illuminated
AV3S0D2

BUSHING Ø 22 (.866) - FLAT ACTUATOR SCREW TERMINALS

Illuminated
AV3SLD9

Non-illuminated
AV3S0D9
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### Bushing Materials

<table>
<thead>
<tr>
<th>BASIC P/N</th>
<th>OVERMOLDING COLORS</th>
<th>LED COLORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 (std)</td>
<td>Nickel plated brass</td>
<td>Blank</td>
</tr>
<tr>
<td>2</td>
<td>Chrome plated brass</td>
<td>No LED</td>
</tr>
<tr>
<td>4</td>
<td>Stainless steel</td>
<td>1 Blue</td>
</tr>
<tr>
<td>5</td>
<td>Gold plated brass</td>
<td>2 Red / green</td>
</tr>
<tr>
<td>6</td>
<td>Chrome plated brass, satin</td>
<td>3 Green</td>
</tr>
<tr>
<td>7</td>
<td>Chrome plated brass, black</td>
<td>4 Grey*</td>
</tr>
</tbody>
</table>

### Overmolding Colors

<table>
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<td>4 Grey*</td>
</tr>
</tbody>
</table>

### Actuator Styles

The ring and symbols are obtained by photochemical engraving of a stainless steel insert. The insert is then overmolded in the desired color.

The following actuator styles are available. For other types, consult factory.

- **Blank** No LED
- **Blue**
- **Red / green**
- **Green**
- **Green, high intensity**
- **Yellow**
- **Red**
- **White**
- **Amber**

**To order a green LED for actuator style 002, always use code V. Other actuator styles can be ordered with LED code 3 or V.**
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Blank  No sealing
K  Front panel sealing to IP67 or IP69K

OPTION K - FRONT PANEL SEALING IP67

OPTION K - FRONT PANEL SEALING IP69K

1 - internal membrane
2 - external gasket