AVP Series – Anti-Vandal Illuminated and Non-Illuminated Piezo Switches

Applications

- **Industrial Control Products.**

- **Communication Equipment.**

- **Medical Equipment.**

Features

- **High Strength.**

- **Corrosion Resistance.**

- **Easy Heat Dissipation.**

- **Flat, High Flat, and Concave Button Types Available.**

- **Momentary Actuation.**

- **Light Weight**

- **Operating Life Up to 50 Million Cycles.**

TE Connectivity is pleased to introduce its AVP Series of Anti-Vandal Illuminated and Non-Illuminated Piezo Switches. These IP68 rated Anti-Vandal switches are available in 16mm, 19mm, and 22mm diameter bushings for a wide range of possible applications. In addition, the AVP series of switches are characterised by 500mm long leads for more convenient installation.
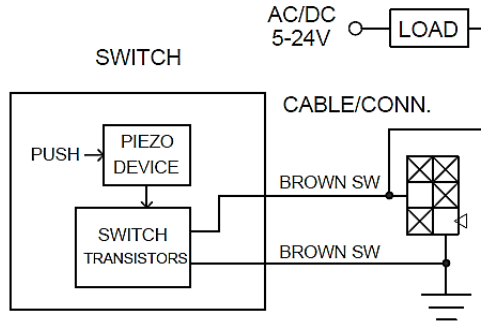
The AVP Switches are characterised by contact rating of 5-24VDC / 1A, 5-24VAC / 1A.
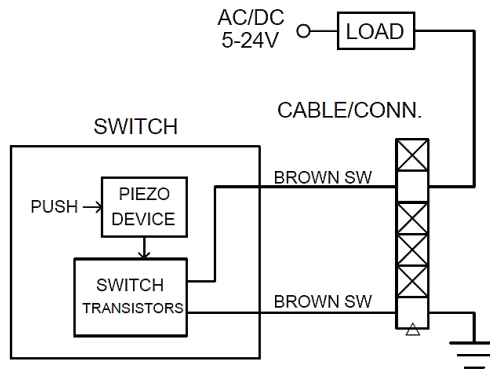
AVP Series – Type Classification

Type	AVC16	AVC19	AVC22
Bushing Size	16mm	19mm	22mm
Actuation	Momentary (MOM. Pulse 200mS Min.)		
Rating	5-24VDC / 1A , 5-24VAC / 1A		
Contact Resistance	1Ω Max.		
Operating Life	50 Million Cycles.		
Sealing	Silicone, Epoxy.		
Wire Leads	26AWG 500mm+2.54 2x3 Connector	26AWG 500mm+2.54 1x6 Connector	
Lead Length	500mm		
Packaging	ESD Bag, Paper Box		

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Rev A
Date: 12-Dec-2018

Dimensions in millimetres unless otherwise specified

Dimensions Shown for reference purposes only. Specifications subject to change

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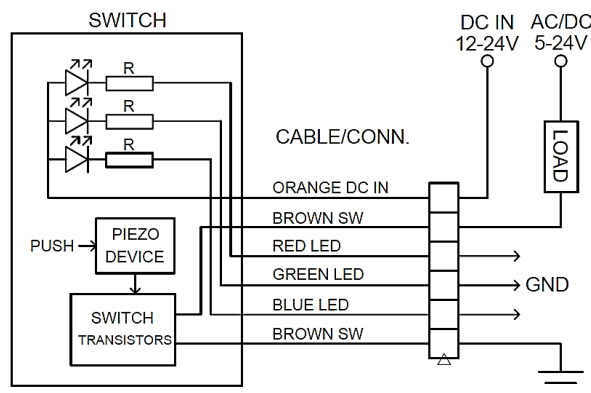
Circuit

-"**0**" Without led application diagram (Only for 16mm Bushing)

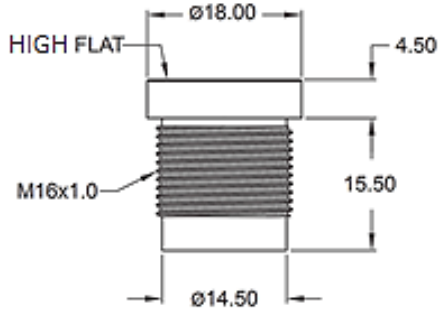-"**0**" Without led application diagram (Only for 19/22mm Bushing)

-"**D**" Color LED application diagram (Only for 19/22mm Bushing)
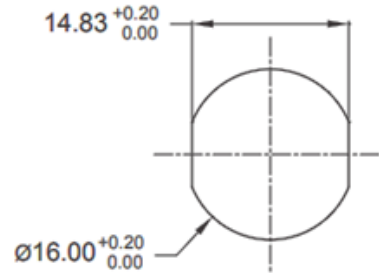

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Bushing and Button Types:

-16mm High-Flat Button   Panel Cut-out

Ø18.00 HIGH FLAT 4.50
M16x1.0 15.50
Ø14.50

14.83 +0.20/0.00
Ø16.00 +0.20/0.00

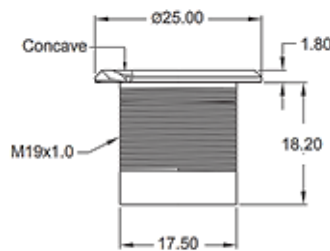Panel thicknes: 8.0mm (Max.)

-19mm

Flat button   Concave button   Panel Cut-out

Ø22.00 FLAT 1.40
M19x1.0 18.60
17.50

Ø25.00 Concave 1.80
M19x1.0 18.20
17.50

17.70 ± 0.25
R9.60 ± 0.25
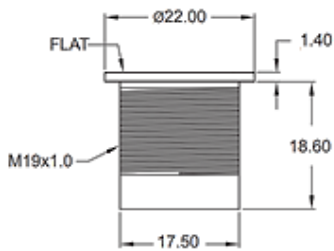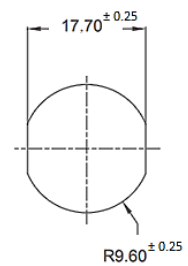
Panel thickness: 10.0mm (Max.)

-22mm

Flat button   Concave button   Panel Cut-out

Ø25.00 FLAT 1.40
M22x1.0 18.60
20.50

Ø28.00 Concave 3.00
M22x1.0 17.00
20.50

20.70 ± 0.25
R11.10 ± 0.25

Panel thickness: 10.0mm (Max.)

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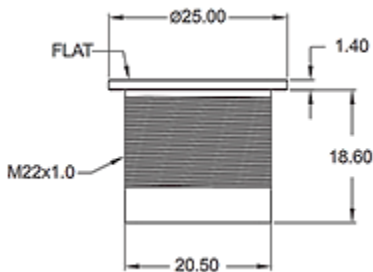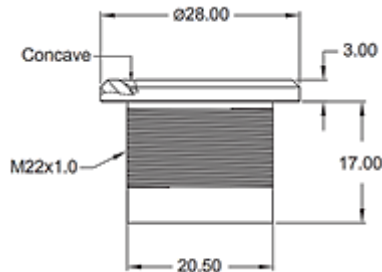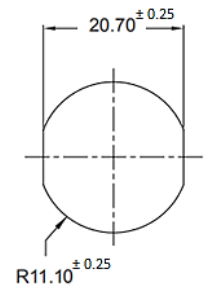
Light Type:

-"**H**" High-Flat button type (without LED)

Ø18.00
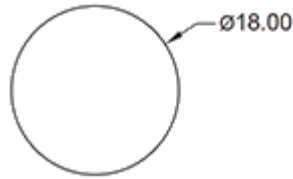
-"**F**" Flat button type (Illuminated LED ring)
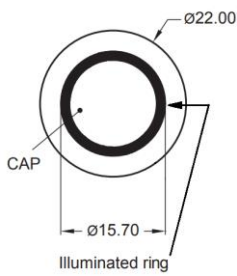
19mm bushing	22mm bushing
Ø22.00 CAP Ø15.70 Illuminated ring	Ø25.00 CAP Ø19.40 Illuminated ring
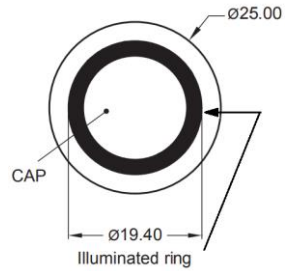
-"**C**" Concave button type (Without LED)

19mm bushing	22mm bushing
Ø25.00 Ø15.60	Ø28.00 Ø19.40
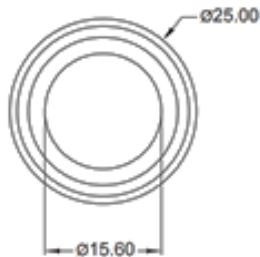
-"**C**" Concave button type (Illuminated LED ring)

19mm bushing	22mm bushing
CAP Ø25.00 Ø15.70 Illuminated ring	CAP Ø28.00 Ø19.40 Illuminated ring

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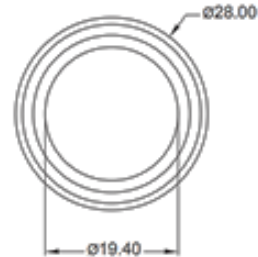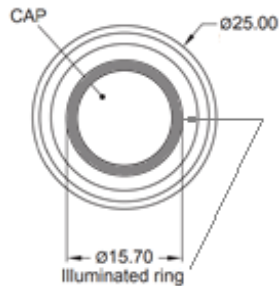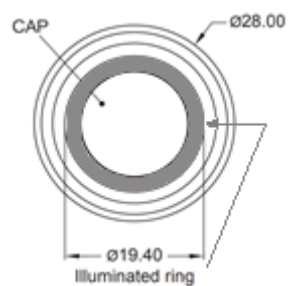
Wire leads:

-"H" (16mm Bushing, High-Flat button, Without LED)
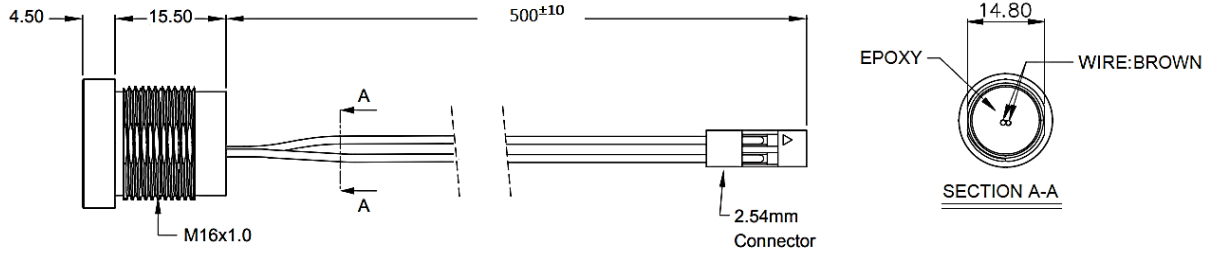
-"C" (Concave button, Without LED)

- 19mm bushing

- 22mm bushing

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-"**F**" (Flat button, Illuminated LED ring)

■ 19mm bushing

18.60
1.40
500±10

A
A

M19x1.0
2.54mm
Connector

Wire:Blue
Wire:Orange
Wire:Brown
EPOXY
Wire:Brown
Wire:Red
Wire:Green
17.50
SECTION A-A

■ 22mm bushing

18.60
1.40
500±10

A
A

M22x1.0
2.54mm
Connector

Wire:Blue
Wire:Orange
Wire:Brown
EPOXY
Wire:Brown
Wire:Red
Wire:Green
20.50
SECTION A-A

-"**C**" (Concave button, Illuminated LED ring)

■ 19mm bushing

1.80
18.20
500±10

A
A

M19x1.0
2.54mm
Connector

Wire:Blue
Wire:Orange
Wire:Brown
EPOXY
Wire:Brown
Wire:Red
Wire:Green
17.50
SECTION A-A

■ 22mm bushing

3.00
17.00
500±10

A
A

M22x1.0
2.54mm
Connector

Wire:Blue
Wire:Orange
Wire:Brown
EPOXY
Wire:Brown
Wire:Red
Wire:Green
20.50
SECTION A-A
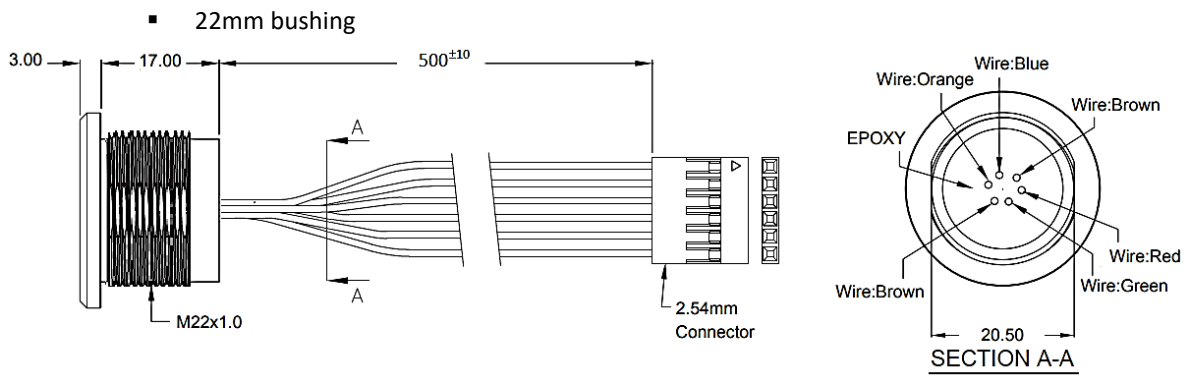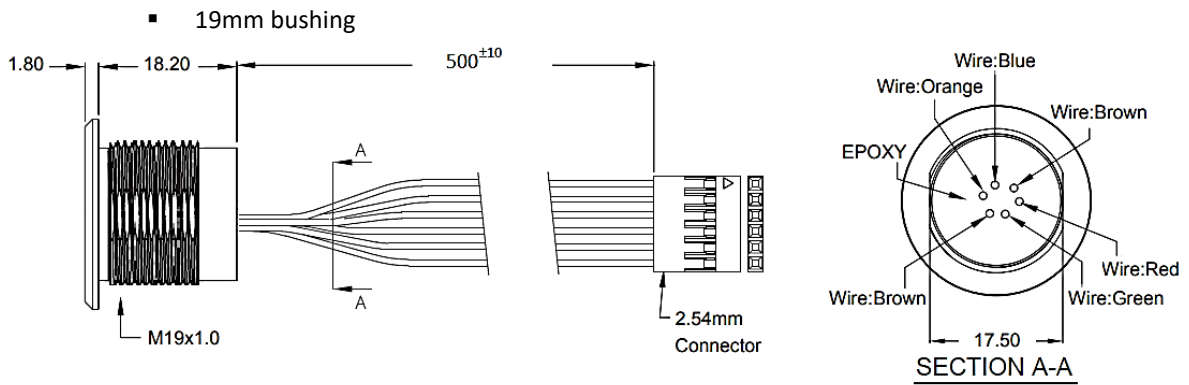
1. Style

1.1 Operating Temperature Range: -20 ℃ to +65℃

1.2 Storage Temperature Range: -40 ℃ to +85℃

2. Current Range: 1A, 5-24VDC Max. / 1A, 5-24VAC Max.

3. Type of Actuation: Momentary.

4. Test Sequence:

	Item	Description	Test Conditions	Requirements
Appearance	1	Visual Examination	By visual examination without any pressure or testing.	There shall be no defects that affect the performance of the product.
Electrical Performance	2	Contact Resistance	At 1A, 5VDC. For transistor resistance from drain to source.	1Ω Max.
	3	Current Rating	With 5Ω resistor.	1A / 5VDC.
Mechanical Performance	4	Actuation force	Touch	2N – 5N.
	5	Operating life	Life cycle tester	50 Million cycles.
	6	Cable retention force to switch	Force Analyzer	10KG Min.

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Environmental Endurance	7	Operating temperature	1) Low Temperature: -20±3℃, 96 Hours. 2) High temperature: 65±3℃, 96 Hours.	As shown in items 2 to 6.
	8	IP68	As per parameters specified by IEC 60529 standards	Pass.
	9	Salt Spray Testing	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before the measurements are made: 1) Temperature: 35±2℃ 2) The ratio of salt-water: 5%. 3) The spray amount of salt-water: 1 to 2 ml/h. 4) Time: 48 hours	The testing standard based on bubble, crack, and magnifying glass with gauge.

4. Packaging: ESD bag, Paper box.

Part numbering – How to order

AVP -☐- M -☐-☐-☐-☐-☐- 04

Series: AVP

Bushing Size:
16 – 16mm
19 – 19mm
22 – 22mm

Actuation Type:
M – Momentary

Bushing Type:
AIO – Aluminum
AIB – Aluminum (Black)
S04 – Stainless Steel 304
S16 – Stainless Steel 316

Button Type:
H – High-Flat
F – Flat
C - Concave

Compliance:
04 – RoHS Compliant

Wire Leads:
T5A – 26AWG 500mm+2.54 1x6 Connector

T5B – 26AWG 500mm+2.54 2x3 Connector

Circuit:
0 – No LED
D – RGB (Red + Green + Blue)

Light Type:
00 – No LED
E0 – LED Ring

-**Example PN:** AVP16MAIOH000T5B04

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PN List

Smart PN	Bushing Size	Bushing Type	Button Type	Light Type	Circuit	Wire Leads	MOQ	TE PN
AVP16MAIOH000T5B04	16mm	Aluminum	High-Flat	No LED	No LED	500mm+2.54 2x3 Connector	100	2342838-1
AVP16MAIBH000T5B04	16mm	Aluminum (Black)	High-Flat	No LED	No LED	500mm+2.54 2x3 Connector	100	2342838-2
AVP16MS04H000T5B04	16mm	Stainless Steel 304	High-Flat	No LED	No LED	500mm+2.54 2x3 Connector	100	2342838-3
AVP16MS16H000T5B04	16mm	Stainless Steel 316	High-Flat	No LED	No LED	500mm+2.54 2x3 Connector	100	2342838-4
AVP19MAIOFE0DT5A04	19mm	Aluminum	Flat	LED Ring	RGB	500mm+2.54 1x6 Connector	100	2342839-1
AVP19MAIOCE0DT5A04	19mm	Aluminum	Concave	LED Ring	RGB	500mm+2.54 1x6 Connector	100	2342840-1
AVP19MAIOC000T5A04	19mm	Aluminum	Concave	No LED	No LED	500mm+2.54 1x6 Connector	100	2342841-1
AVP19MAIBFE0DT5A04	19mm	Aluminum (Black)	Flat	LED Ring	RGB	500mm+2.54 1x6 Connector	100	2342839-2
AVP19MAIBCE0DT5A04	19mm	Aluminum (Black)	Concave	LED Ring	RGB	500mm+2.54 1x6 Connector	100	2342840-2
AVP19MAIBC000T5A04	19mm	Aluminum (Black)	Concave	No LED	No LED	500mm+2.54 1x6 Connector	100	2342841-2
AVP19MS04FE0DT5A04	19mm	Stainless Steel 304	Flat	LED Ring	RGB	500mm+2.54 1x6 Connector	100	2342839-3
AVP19MS04CE0DT5A04	19mm	Stainless Steel 304	Concave	LED Ring	RGB	500mm+2.54 1x6 Connector	100	2342840-3
AVP19MS04C000T5A04	19mm	Stainless Steel 304	Concave	No LED	No LED	500mm+2.54 1x6 Connector	100	2342841-3
AVP19MS16FE0DT5A04	19mm	Stainless Steel 316	Flat	LED Ring	RGB	500mm+2.54 1x6 Connector	100	2342839-4
AVP19MS16CE0DT5A04	19mm	Stainless Steel 316	Concave	LED Ring	RGB	500mm+2.54 1x6 Connector	100	2342840-4
AVP19MS16C000T5A04	19mm	Stainless Steel 316	Concave	No LED	No LED	500mm+2.54 1x6 Connector	100	2342841-4
AVP22MAIOFE0DT5A04	22mm	Aluminum	Flat	LED Ring	RGB	500mm+2.54 1x6 Connector	100	2342842-1
AVP22MAIOCE0DT5A04	22mm	Aluminum	Concave	LED Ring	RGB	500mm+2.54 1x6 Connector	100	2342843-1
AVP22MAIOC000T5A04	22mm	Aluminum	Concave	No LED	No LED	500mm+2.54 1x6 Connector	100	2342844-1
AVP22MAIBFE0DT5A04	22mm	Aluminum (Black)	Flat	LED Ring	RGB	500mm+2.54 1x6 Connector	100	2342842-2
AVP22MAIBCE0DT5A04	22mm	Aluminum (Black)	Concave	LED Ring	RGB	500mm+2.54 1x6 Connector	100	2342843-2
AVP22MAIBC000T5A04	22mm	Aluminum (Black)	Concave	No LED	No LED	500mm+2.54 1x6 Connector	100	2342844-2
AVP22MS04FE0DT5A04	22mm	Stainless Steel 304	Flat	LED Ring	RGB	500mm+2.54 1x6 Connector	100	2342842-3
AVP22MS04CE0DT5A04	22mm	Stainless Steel 304	Concave	LED Ring	RGB	500mm+2.54 1x6 Connector	100	2342843-3
AVP22MS04C000T5A04	22mm	Stainless Steel 304	Concave	No LED	No LED	500mm+2.54 1x6 Connector	100	2342844-3
AVP22MS16FE0DT5A04	22mm	Stainless Steel 316	Flat	LED Ring	RGB	500mm+2.54 1x6 Connector	100	2342842-4
AVP22MS16CE0DT5A04	22mm	Stainless Steel 316	Concave	LED Ring	RGB	500mm+2.54 1x6 Connector	100	2342843-4
AVP22MS16C000T5A04	22mm	Stainless Steel 316	Concave	No LED	No LED	500mm+2.54 1x6 Connector	100	2342844-4

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