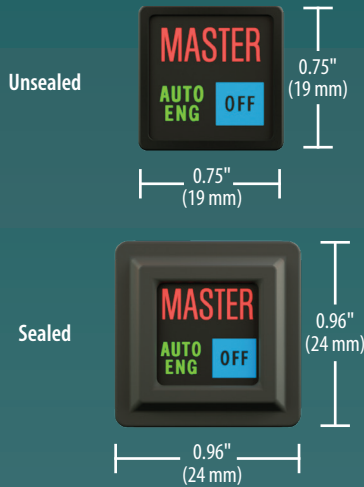


LED Pushbutton Cap Dimming Options

28 VDC Voltage Dimming and Discrete Dimming with Press-To-Test

The Applied Avionics' VIVISUN product line offers best-in-class ruggedized illuminated pushbutton switches and indicators that meet the requirements of MIL-PRF-22885 and RTCA DO-160. Each LED switch cap assembly has a unique fault-tolerant illumination circuit, and offers a full complement of lighting colors, display types and dimming features.

Available Sizes



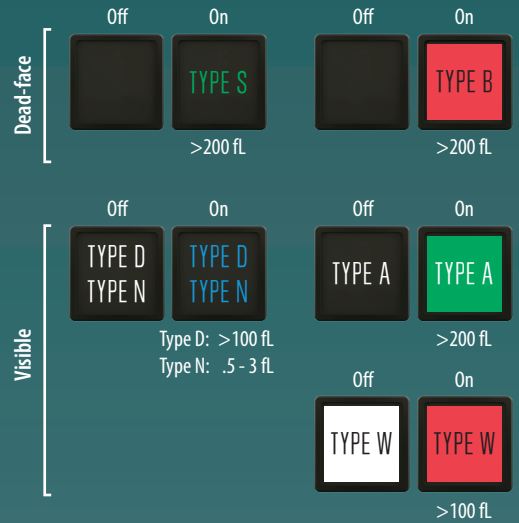
Available Colors

Colors for reference only.

- Aviation Colors**
 - Blue
 - Green
 - White
 - Yellow
 - Red
- NVIS Colors**
 - NVIS Blue
 - NVIS Green A
 - NVIS Green B
 - NVIS White
 - NVIS Yellow Class A
 - NVIS Yellow Class B
 - NVIS Red
 - NEW - Alternate NVIS Red for civil applications

Available Display Types

Minimum luminance levels at rated voltage.



Voltage Dimming with Press-To-Test

Voltage dimming LED caps use an advanced electrical circuit design which allows consistent, uniform dimming from daylight conditions to nighttime flying levels with a simple change to input voltage. Voltage dimming caps are available in three different schematic layouts including standard, standard with blocking diodes and Press-To-Test with blocking diodes. Blocking diodes reduce sneak paths and minimize the possibility of inadvertent illumination. Additionally, voltage dimming caps can be customized by polarity (common anode or common cathode), number of commons (single common or split common) and by selecting options for internal quadrant interconnections.

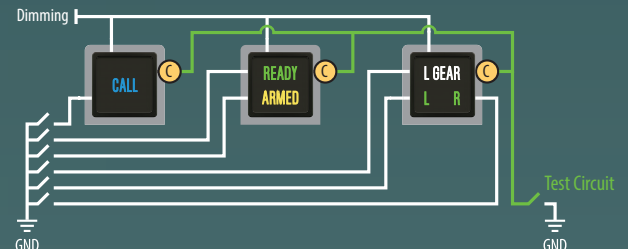
Table 1: Voltage Dimming Cap Schematic Options

Schematic Layout	Base Schematic (see Note 1)			Internal Quadrant Interconnect Options
	Single Common	Split Common	Polarity	
Voltage Dim Standard			Common Anode shown. For Common Cathode, polarity markings are reversed.	Full Face 2 Way Split
Voltage Dim Standard with Blocking Diodes			Common Anode shown. For Common Cathode, diodes and polarity markings are reversed.	3 Way Split 3 Way Split 4 Way Split
Voltage Dim Press-To-Test with Blocking Diodes			Common Anode shown. For Common Cathode, diodes and polarity markings are reversed.	Full Face 2 Way Split 3 Way Split Pin C dedicated for Press-To-Test circuit.

Note 1: Represents each quadrant's 4 LEDs and dimming circuitry, represents each quadrant's blocking diode, 4 LEDs and dimming circuitry.

Press-To-Test Interconnect Options

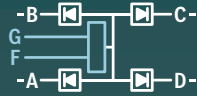
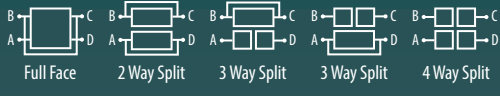

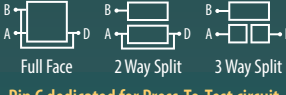
The **Press-To-Test** option provides a dedicated test input which allows the entire legend (every segment) to energize when the specified test signal is applied to the dedicated test input. Additionally, each LED input is diode isolated to prevent the occurrence of a sneak path from the test signal while in "Test Mode". As depicted, multiple pushbutton caps may be connected together in order to illuminate all pushbutton cap legends while in the "Test Mode". The common anode circuit shown demonstrates the three interconnect options available when Press-To-Test is specified.



Discrete Dimming – Power/Ground (PG) Control with Press-To-Test

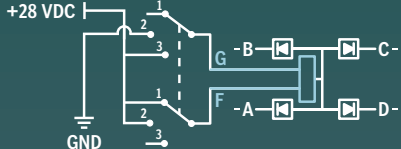
Discrete Dimming with Power/Ground Control has up to three predefined dimming modes in a single cap by applying various combinations of 28 VDC, Ground, or Open to two dimming mode control pins (Pins F and G). Caps are available in two schematic layouts that include Discrete Dim (PG) with Blocking Diodes and Discrete Dim (PG) Press-To-Test with Blocking Diodes. Additionally, discrete dimming caps can be customized by polarity (common anode or common cathode) and by selecting options for internal quadrant interconnections. **Table 2** illustrates all of the Discrete Dimming with Power/Ground Control cap schematic options. There are nine distinct dimming levels shown in **Table 3** covering the entire range of Aviation and NVIS colors. Each cap can be configured with two or three of the distinct dimming levels.

Table 2: Discrete Dimming – Power/Ground Control Cap Schematic Options

Schematic Layout	Base Schematic (see Note 1)	Internal Quadrant Interconnect Options
Discrete Dim (PG) with Blocking Diodes	 <p>Common Anode shown. For Common Cathode, diodes and polarity markings are reversed.</p>	
Discrete Dim (PG) Press-To-Test with Blocking Diodes	 <p>Common Anode shown. For Common Cathode, diodes and polarity markings are reversed.</p>	 <p>Pin C dedicated for Press-To-Test circuit.</p>

Note 1:  Represents each quadrant's blocking diode, 4 LEDs and dimming circuitry,  represents discrete dimming circuitry (see Table 3).

Table 3: Power/Ground Control Dimming Levels

				Dimming Mode Controls		
				Mode 1	Mode 2	Mode 3
Sample Wiring: Typical 3 mode with 2 pole rotary control, common anode depicted		Polarity	Control Pins			
		Common Anode	Control Pin F:	28 VDC	28 VDC	Open
			Control Pin G:	Open	Ground	28 VDC
		Common Cathode	Control Pin F:	Ground	Ground	Open
Control Pin G:	Open		28 VDC	Ground		
Dimming Levels Available		Typical Luminance		Dimming Level by Mode		
Aviation Colors	NVIS Colors	Approx. Equivalent Voltage for LED	Typical Luminance (Full Face, Type S)	Mode 1	Mode 2	Optional Mode 3 (*)
Sunlight		28 VDC	350+ fL	●		
Day		18-20 VDC	120 fL	●		
Enclosure		15-17 VDC	60 fL		●	
Aviation Night		13-15 VDC	15 fL		●	●
Low Night		8-9 VDC	7 fL		●	●
Panel	NVG Compatible	7-8 VDC	2 fL		●	●
Low Panel (**)	NVG Compatible - 1 fL (**)	7.2 VDC	1 fL		●	●
—	NVIS Compliant	6.55-7 VDC	.1-1 fL		●	●
Minimum Panel (**)	NVIS Compliant - .1 fL (**)	6.55 VDC	.1 fL		●	●
Mode 3 Not Required (2 Level Dimming Only)						●

(*) Mode 3 level must be at or below Mode 2 level. (**) Tightly controlled equivalent voltage level for given luminance.

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