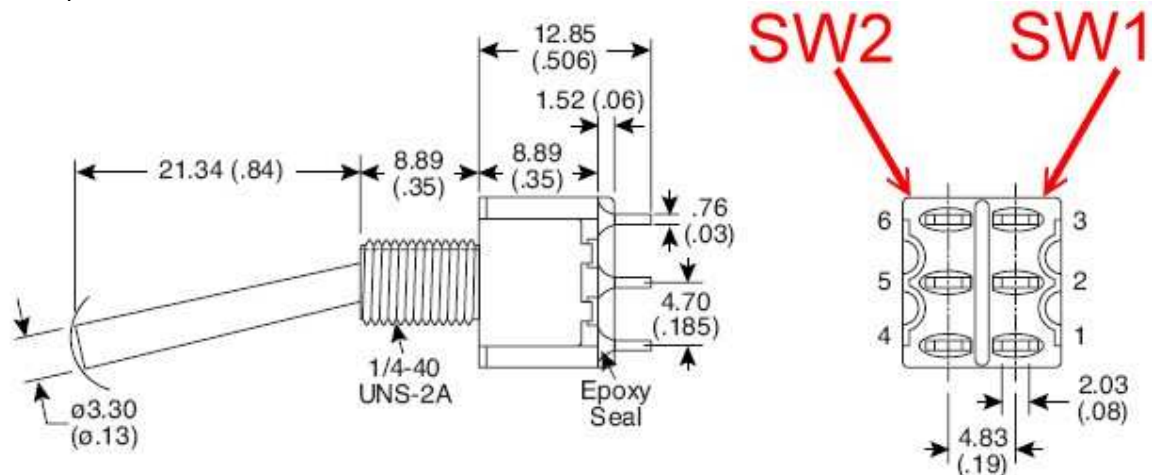


Overhead Panel Wiring Diagram NOTES

Ok, I admit the overhead diagram has confused some people because of the way I have set it out, so I'm going to de-cipher it here and explain what's going on. Sorry guys, I understood it :o))

First thing to understand is that the voltage and the BU0836X (or whatever card you have) switching are separate. If a switch needs to send to the controller card and also light an LED, I have used DP switches. Two separate switches in one housing. Now they may be Double Terminal with C/O if I need to send 2 signals to the controller card or simple On/Off. It all depends what action I need to accomplish with it.



The standard here is that SW1 is always going to be connected to the BU0836X and SW2 will be connected to the 5vdc. This is because not all switches need to light an annunciator (e.g. TRIM AIR, Isolation Valve, Wing Lights etc).

The next thing to understand is that there are two distinct parts to powering the overhead. The Electrical Panel and the 'BUS'.

The Electrical Panel. There are several means to power an aircraft. Battery, Ground Power, APU Gens and the Engine Gens. This panel is the means whereby power is distributed from the available



sources to the BUS. If you look at the overhead diagram, you will see that several switches and components in the upper centre of the sheet are enclosed in a green outline....This is the Electrical Panel distribution system. How it works is like this.....Look at the image on the left. Indicated on the Meter Panel is a switch. On this switch, we can select GND PWR, APU and Eng Gens. I refer to this switch as the 'Routing Switch'. 5vdc is sent from the PSU when it is turned on with the Battery Switch (under the left hand knob in the image) to the routing switch. From here we select what source of power we require for that phase of the flight. [Here's some examples.](#) **1.** At the gate prior to departure, Ground Power is usually supplied to the aircraft. So, selecting GND PWR on the meter panel switch routes the 5v to the ground power switch (lighting the GP Avail. LED). So using a DPDT switch with C/O, I can send 2 actions to the FSUIPC

macro's for GP Switch Up and GP switch Down. In the down position, 5vdc is sent from the GND PWR position into the BUS. **2.** With the BUS Powered from the GND PWR source, we can start the APU. Again, the APU start switch is a DPDT switch that is going to send the APU start and stop signals thru the BU0836X into FSUIPC which will action the macro. The other side of the switch is going to light the APU Low Oil Pressure and Maint. Annunciators while the switch is held in the start position. After starting the APU, it usually takes about 60-70 seconds for the Gens to be come available. Now turning the routing switch to APU, the 5vdc is sent to the APU GEN switches. Again DPDTCO switches so I can action APU1 Gen and APU2 Gen Off and On. If either APU Gen is off

while the APU circuit is active, the APU Gen OFF Led is lit. **3.** With the APU running and on line, setting the bleed valves allows us to start the engines. Once two starts have been accomplished, The Eng Gens are available. Selecting an engine Gen position on the routing switch sends the 5vdc via the Drive Switches (5A and 5C) to the Eng Gen switches. DPDTCO SW1 sends the Eng Gen On/Off buttons thru the BU0836X to FSUIPC which actions the macro and SW2 routes the 5vdc to the BUS.

Hopefully that helps everybody.

The BUS. Now this is the second part of the panel that receives the 5vdc from the distribution system and supplies all the 'supplementary systems'. That is everything which is not involved with the power routing system. i.e. Anti Ice, Probes, Fuel Pumps etc. It is simply a cable fed around the inside of the overhead from which a supply of 5v can be got.

If you look at the wiring diagram, in the top left corner you will see 3 diodes labelled Gens, GND PWR & APU. This is where the delivery of the 5vdc is supplied to the BUS from whatever source is being used. Example In the centre of the diagram, you will see ENG GEN 1 (Eng Gen 2 is identical) that is labelled 5B & 5D. The switch also bears the label 'To Bus *'. Now look at the top left corner, this is where that line goes.

Hopefully, that's cleared that up.