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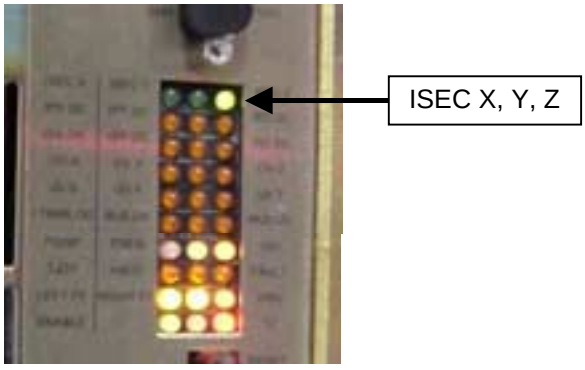
1-OVERVIEW

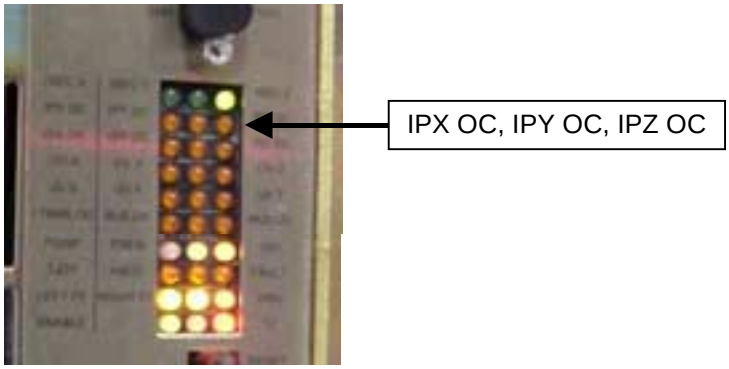
The power supply contains 3 transformers, one for each axis. The primary current is controlled by the power supply and the secondaries of the transformers feed the SGAs. The over current faults are separated into primary side and secondary side faults.

2-LEDS

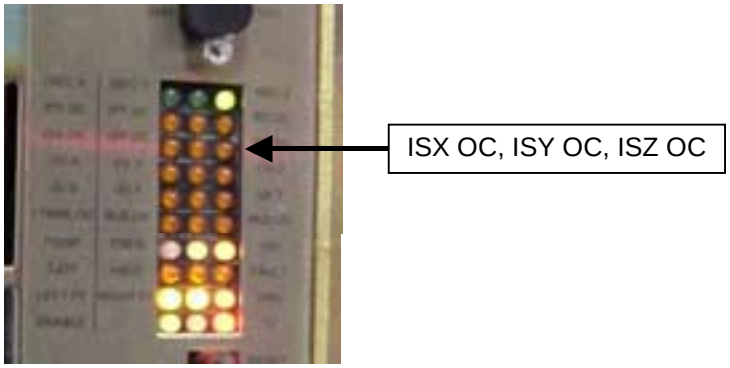
1. ISECX, ISECY, ISECZ: These indicate the secondary currents in the power supply for each axis. They will light up when the SGA for that axis pulls current from the power supply.



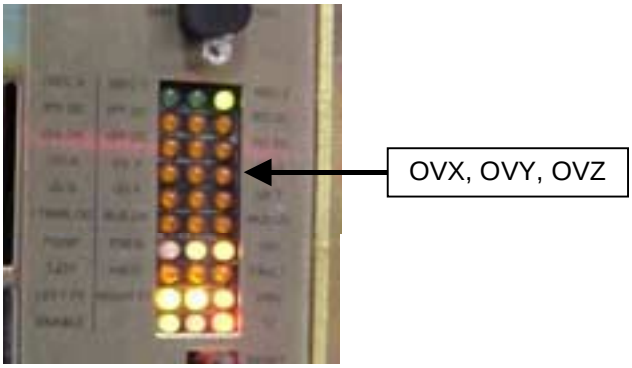
2. IPX OC, IPY OC, IPZ OC: These indicate over currents in the transformer primaries. This is an uncommon fault that would indicate a shorted transformer primary.



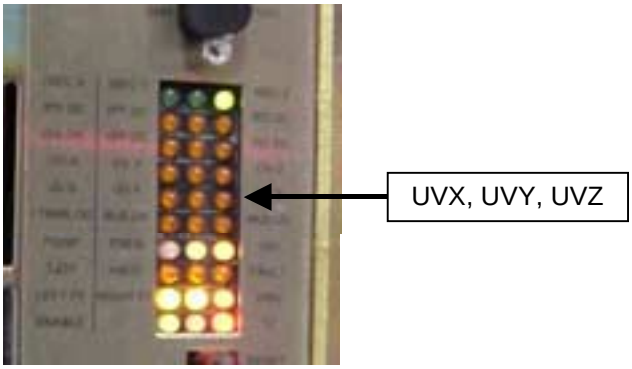
3. ISX OC, ISY OC, ISZ OC: These indicate over currents in the transformer secondaries. The main 2 causes are a blown IGBT in the SGA or a shorted diode module in the power supply. If it is a SGA IGBT, the gate drive indicators located above the heatsink on the SGA will be out.



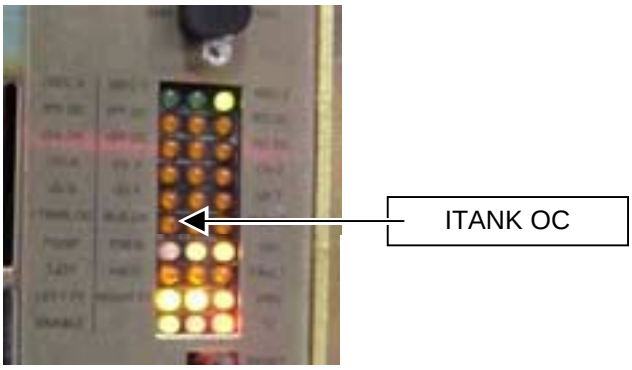
4. OVX, OVY, OVZ: These indicate over voltages on the output of the power supply. Loose connectors to the SGA can cause this problem.



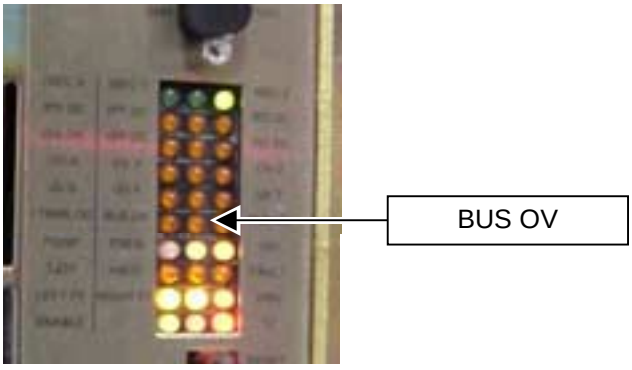
5. UVX, UVY, UVZ: These indicate under voltages on the output of the power supply. Shorted semiconductors in the SGA or Power Supply can cause these.



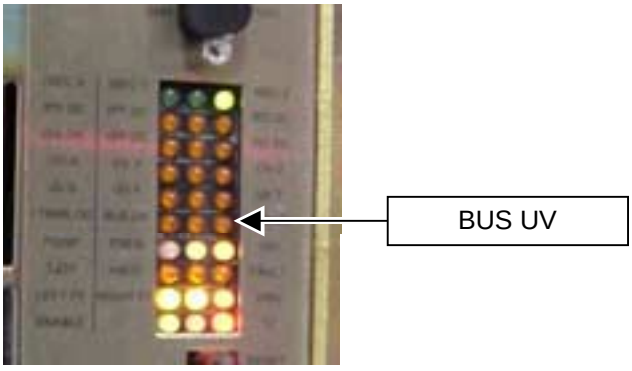
6. ITANK OC: Indicated that the sum of the transformer primary currents is too large. This fault is uncommon. This indicates heavy loads on all three axes at once.



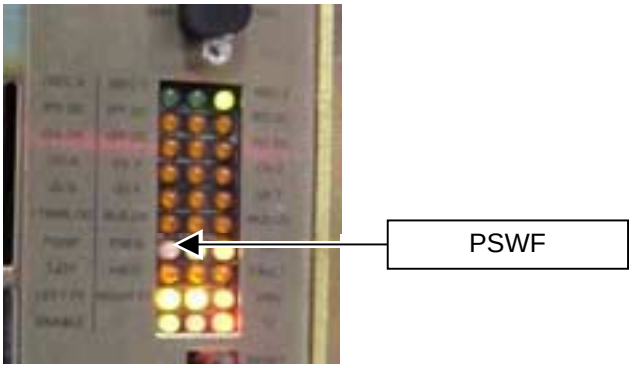
7. BUS OV: This indicates an over voltage on the input bus of the power supply. The 420 VAC on the back of the power supply goes through a 3-phase rectifier to feed this bus. If you see this fault, check the tapping of the PDU and measure the 420 VAC on the terminal block in the back of the power supply.



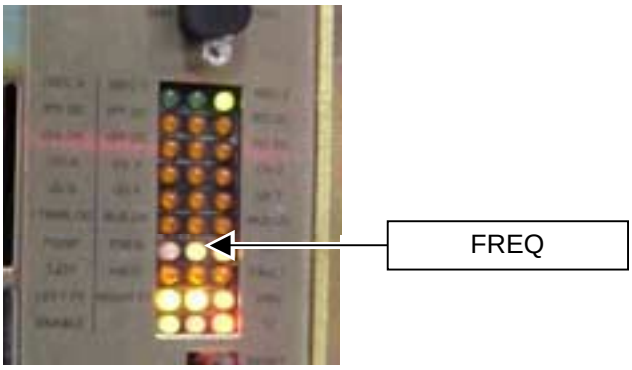
8. BUS UV: This indicates an undervoltage on the input bus of the power supply. Mis-tapping the PDU or line sags can cause this.



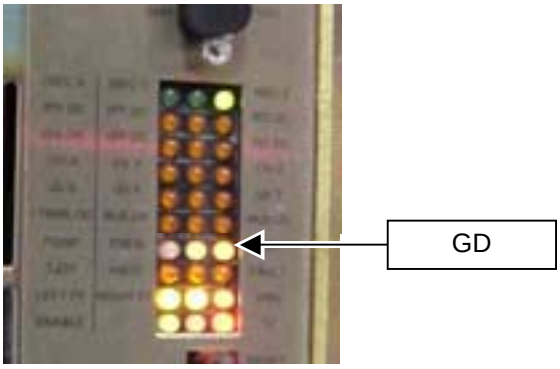
9. PSWF (Power Supply Wire Fault): This indicates one of 3 faults. It could be an undervoltage on the 5V or 15V on the control board or it is a wire fault (a connector internal to the power supply has come unplugged). We have been seeing this where there are line sags. Engineering is looking to resolve this by making changes to either the control transformer or the gate driver board. The change will be implemented in July.



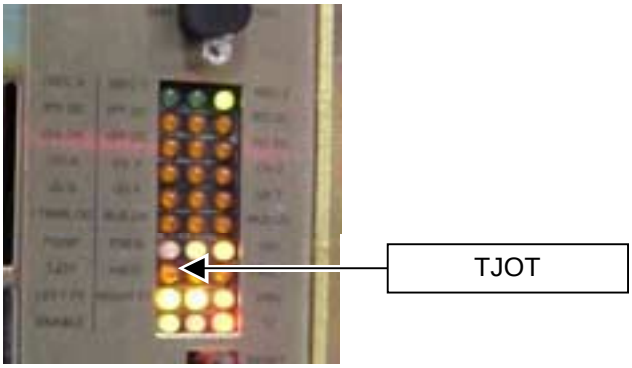
10. FREQ: This is a control signal that indicates the frequency that the IGBTs are switching at.



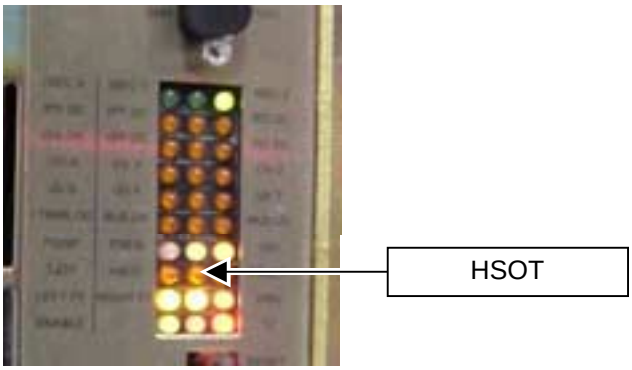
11. GD (Gate Drive): This shows the switching of the Gate Drive power supply. If this light is ever-solid red or solid green, it means there is a problem on the control board or gate driver and the IGBTs will never switch so you should replace the power supply.



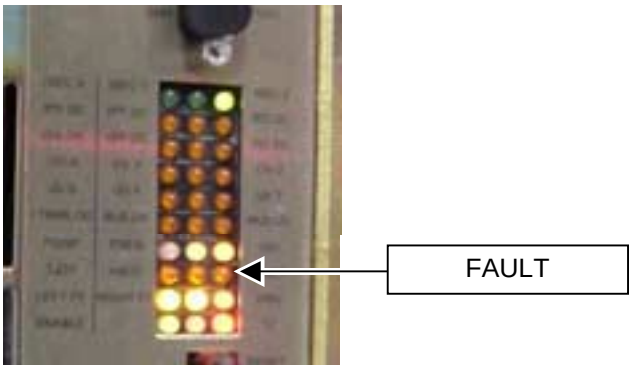
12. TJOT: Ignore this control signal. It is not meaningful.



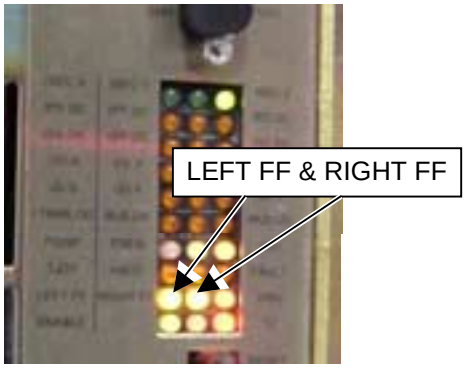
13. HSOT: Heat sink over temperature. Check that the cabinet fan is running in the correct direction.



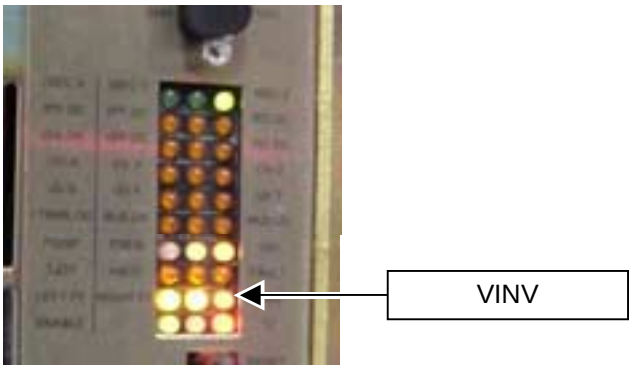
14. FAULT: Lights whenever one of the faults described above is true, or the reset pushbutton is pressed.



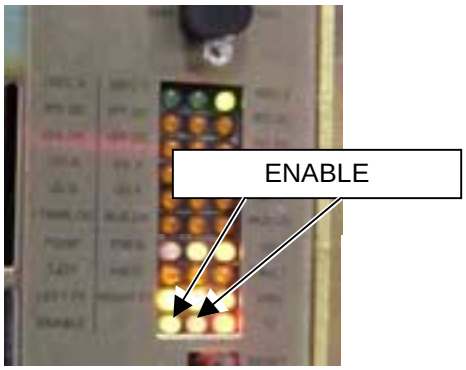
15. LEFT FF, RIGHT FF: IGBT switching indicators.



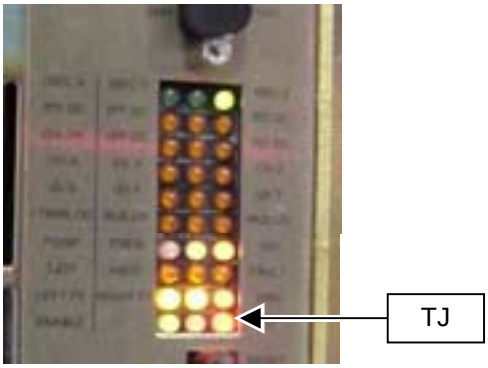
16. VINV: Control signal that indicates the IGBTs are switching.



17. ENABLE: Lights when the power supply is enabled by the GP.



18. TJ: Ignore this. It is usually red all the time.



REVISION HISTORY

REV	DATE	AUTHOR	PRIMARY REASONS FOR CHANGE
A	May 18, 2001	K.Keshena	Preliminary release.
0	May 23, 2001	K.Keshena	Initial release.