



APPLICATION NOTES FOR USE WITH SPELLMAN HIGH VOLTAGE POWER SUPPLIES

Application Note Number: AN-06
Revision: 01/19/04

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“Just jumper the external interlock”? Why you really shouldn’t.

Many Spellman high voltage power supplies come with an external interlock feature. Typically the external interlock is provided by means of two signal connections on the rear panel terminal block or interface connector. This feature provides the user the ability to shut off and prevent the generation of high voltage in a fail safe manner. This external interlock circuitry can easily be incorporated into the user’s setup to provide an additional level of operator safety.

In most cases the current of the relay coil that is used to latch the power supply into the HV ON mode is routed out to, and back from, the rear panel external interlock points. This is usually a low voltage relay coil; 12Vdc or 24Vdc with current in the range of tens of milliamps. The two external interlock points must be connected together with a low impedance connection to allow the power supply to be placed into, (and to continue to operate in) the HV ON mode.

Opening this connection will prevent the supply from being placed in the HV ON mode. Additionally, if the unit was actively running in the HV ON mode, open this connection would cause the power supply to revert to the HV OFF mode. The external interlock is the best method of controlling the power supply output with regards to safety, other than disconnecting the power supply from its input power source.

Typically our power supplies are shipped with the two external interlock connections jumpered together to allow quick and easy operation of the supply. Leaving the unit configured in this manner does indeed work, but it bypasses the external interlock function.

Spellman recommends that any exposed high voltage potential be isolated from contact through the use of appropriate physical barriers. High voltage cages or enclosures should be used to protect operators from inadvertent contact with potentially lethal voltages. Doors and/or access panels of these cages or enclosures should have a normally open interlock switch installed on them such that the switch is in the closed state only when the door or panel is in the secured position. Opening the door or panel will revert the power supply to the HV OFF mode, and prevent the supply from being placed in the HV ON mode until the door or panel is properly secured.