



PRODUCTS, INC.

AN-0001

Title: Using the TRG-1640 above rated capacity

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The Elk TRG-1640 transformer is designed to operate reliably in applications up to 40VA. The transformer has a solid-state protection device that works by dramatically increasing the output resistance when the transformer is overloaded. As the resistance increases, the device heats faster and the cycle continues until the resistance of the device is so high that the output current drops to a few milli-amps. Disconnecting the load completely allows the device to cool quickly, the resistance drops to normal again and the device is effectively reset. If a very small load remains connected, the protection device will gradually cool down and begin to conduct again but will reach an equilibrium point at a very low current level and not get back to full voltage. This is a characteristic of positive temperature coefficient devices.

A problem has been noted in applications using a Radionics D9416 control panel. The panel can require more than 40VA for an extended time after a battery has been heavily discharged. In this situation, the transformer will run above rated power for several hours and then trip out. Because the control panel is still connected, the transformer can not fully reset on it's own. After the transformer cools down sufficiently, the protective device will begin to conduct some and may show several volts at the terminals without actually resetting. Disconnecting either the 120 VAC supply or the load momentarily is enough to fully reset the transformer. This problem may occur in other applications where the transformer is overloaded for an extended period.